A conceptual framework to guide the implementation of best and next practice in services and supports for Veterans and their Families

Technical Document

ATLAS INSTITUTE FOR VETERANS AND FAMILIES

Phoenix AUSTRALIA | CENTRE FOR POSTTRAUMATIC MENTAL HEALTH

Acknowledgements

The Conceptual Framework to Guide the Implementation of Best and Next Practice in Services and Supports for Veterans and their Families was developed as a collaboration between Phoenix Australia - Centre for Posttraumatic Mental Health and Atlas Institute for Veterans and Families. We gratefully acknowledge the contribution of Veterans and families in the development of the Framework.

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The Conceptual Framework to Guide the Implementation of Best and Next Practice in Services and Supports for Veterans and their Families

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Abbreviations

AA	Alcoholics Anonymous
ADF	Australian Defence Force
AI	Artificial Intelligence
AOD	Alcohol and Other Drugs
CAF	Canadian Armed Forces
CAG	Consumer Action Group
CAPS	Clinician-Administered PTSD Scale for DSM-5
CBT	Cognitive Behavioural Therapy
CBT-I	Cognitive Behavioural Therapy for Insomnia
CDE	Common Data Elements
CPT	Cognitive Processing Therapy
DSM-5	The Diagnostic and Statistical Manual of Mental Disorders 5th Edition
DVA	Department of Veterans' Affairs
EBP	Effective interventions and treatment programs
EBT	Evidence-Based Treatment
EMDR	Eye Movement Desensitization and Reprocessing
FWS	Family Wellbeing Study
GP	General Practitioner
GTO	Getting to Outcomes
IAPT	Improving Access to Psychological Therapies
ICD-11	The International Classification of Diseases 11th Revision
IHI	Institute for Healthcare Improvement
IOF	Implementation Outcomes Framework
IS	Implementation Science
IT	Information Technology
KMb	Knowledge Mobilisation
LC	Learning Collaborative
MBC	Measurement Based Care
MDMA	3,4-Methylenedioxy-methamphetamine
NA	Narcotics Anonymous
NGO	Non-governmental Organisation
NHS	National Health Service
OL	Opinion Leaders
OSI	Operational Stress Injury
PDA	Patient Decision Aid
PE	Prolonged Exposure
PTSD	Post-Traumatic Stress Disorder
QIC Collaborative	Quality Improvement
RE-AIM	Reach Effectiveness Adoption Implementation Maintenance
ROM	Routine Outcomes Monitoring
RSL	Returned Soldier's League
rTMS	Repetitive Transcranial Magnetic Stimulation
SDM	Shared Decision Making
TF-CBT	Trauma-Focused Cognitive Behavioural Therapy
TIP	Trauma Informed Practice
UK	United Kingdom
US	United States
VA	Veterans' Affairs
VVFS	Vietnam Veterans Family Study

1 Executive Summary

The Conceptual Framework to Guide the Implementation of Best and Next Practice in Services and Supports for Veterans and their Families (the Conceptual Framework) has been developed as a collaboration between Phoenix Australia - Centre for Posttraumatic Mental Health (Phoenix Australia) and Atlas Institute for Veterans and Families (Atlas Institute). We have come together as intermediary organisations in the field of Veteran and military mental health, united by a shared purpose - to serve those who have served - and shared vision - to optimise the wellbeing of current and former Defence members through the best possible system of support and care.

The *Conceptual Framework* is intended to be helpful to the broadest possible audience, that is, the range of stakeholders with an ability to influence the outcomes for Veterans and their families – funders, insurers, policy makers, system managers, regulators, intermediary organisations, service providers, support organisations, practitioners and individual Veterans, their families and communities.

As organisations, Phoenix Australia and Atlas Institute are, first and foremost, guided by the lived experience of Veterans and their families. The Conceptual Framework therefore begins in Section 3, with an overview of the mental health and wellbeing needs of Veterans and their families as context for consideration of current and best practice system of services and supports.

Military service, with its inevitable exposure to highly stressful and potentially traumatic events, represents a unique risk factor for mental wellbeing. However, the exact nature of the individual's military experience combined with pre-military factors, family context and a host of sociodemographic factors, all contribute to wellbeing outcomes for each Veteran as an individual. Taken as a group, we know that mental health disorder is highly prevalent amongst Veterans, affecting up to 25% of their number. The etiology of mental health problems in Veterans is multifactorial and the nature of mental health problems is complex, with comorbidity the norm. Our understanding of Veteran mental health needs to be contextualised within a broader wellbeing paradigm, with a focus on prevention and early intervention as well as treatment. It should also

The Conceptual Framework to Guide the Implementation of Best and Next Practice in Services and Supports for Veterans and their Families is intended to:

1. Articulate a clear conceptual approach to improving the lives of Veterans and their families;
2. Provide an overarching design and 'scaffold' around which to build an effective system of services and supports that better meet the needs of Veterans and their families;
3. Provide a structure around which current and planned initiatives in service development can be considered;
4. Help determine where different systems are in relation to best and next practice services and supports;
5. Outline the best approach and path to get there, recognising the differing start points of various systems;
6. Offer a more general guide to developing systems to support future service innovation.

Recognising that no single organisation can deliver an integrated system design alone, the success of this depends upon the active involvement of a broad range of stakeholders

encompass a longitudinal perspective, mindful of the lifecycle of the Veteran, with transition from the military recognised as a particular time of vulnerability for the emergence of mental health concerns. Family wellbeing is central to Veteran wellbeing, so we must consider the needs of the family, whatever the family make-up may be for the individual at a particular point in time, if we are to properly consider the needs of the Veteran.

In the context of an understanding of the mental health needs of Veterans and their families, Section 4 examines the current system of services and supports, argues the social and economic case for investing in improvement, and presents a vision for the optimisation of services and supports for Veterans and their families. Currently, Veterans and their families face a complex and poorly integrated array of services and supports. Some elements of the system are high quality but taken as a whole, the existing systems of care do not adequately meet their needs across all areas. Some of the key challenges that are typically not addressed and therefore remain as barriers to optimising outcomes for Veterans and their families include the desire of many for self-management, stigma driving reluctance to seek treatment, access barriers, lack of service capacity, provision of non-evidence-based treatment, modest treatment response to evidence-based treatment, and lack of involvement of families and peers.

The burden of a sub-optimal system of care and support is carried not only by the individual Veteran and their family, with health, social and economic disadvantage, but also by society as a whole, with substantial direct healthcare costs combined with the indirect cost of lost productivity. An efficient and effective Veterans' posttraumatic mental health system has the potential to reduce domestic violence, family breakdown, suicide rates, unemployment, homelessness, and disability adjusted life years (healthy years lost), as well as making longer term savings in health and psychosocial care costs.

> Family wellbeing is central to Veteran wellbeing, so we must consider the needs of the family, whatever the make-up may be for the individual at a particular point in time

We propose a system of services and support based on the seven principles of 1) respect and dignity, 2) engagement and involvement, 3) equity of access, 4) breadth of support, 5) high quality treatment and care, 6) holistic outcomes and 7) economic responsibility. We deliberately use the terminology of a system. Although there is no single organising entity, from the point of view of the service user, the range of available services and supports constitute a system for them. The Veteran and their family stand at the centre of the system, with all services and supports accessible and acceptable to them, recognising diversity within the population. Key features of the system include universal mental health literacy, the involvement of peers and lived experience advocates, a stepped / matched model of care with intake assessment, service navigation and care coordination functions, and the use of data for quality assurance and continuous improvement.

Recognizing that no single organisation can deliver this integrated system design alone, the success of the system depends upon the active involvement of the broad range of stakeholders who have the capacity to influence the operation of the system and therefore to impact outcomes for Veterans and their families. These stakeholders include Veterans and families themselves, as well as peer supporters, mental health professionals, providers of broader wellbeing services, and enablers such as funding bodies, regulators and policy makers.

Best and next practice interventions and treatment underpin all elements of the system. Best practice refers to those practices with a strong evidence base, while next practice refers to the processes required to continually improve current best practice, and facilitate identification and implementation of future best practices. Section 5 introduces a stepped / matched model of care as an organising framework for describing current best and next practice interventions, evidence for their effectiveness, and gaps in evidence that are still to be addressed. The proposed stepped / matched model pushes past the boundaries of current models to create a dynamic service system that optimises outcomes at a population level with a simultaneous focus on reach, uptake, engagement and outcomes. In considering not only the interventions required at each level of care, but also mechanisms that address entry into, navigation within and care-coordination across the system, it holds the potential for personalised care delivered flexibly to meet the ever-changing needs of Veterans and their families. The system design takes an holistic wellbeing approach rather than being pathology focused, integrates services for Veterans with services for families, allows the person to enter directly at the appropriate level for their needs at that time, incorporates face-to-face as well as digital resources, and commits to measurement based care.

The model includes six tiers, starting with population health and moving through informal community supports, formal community supports and services (including primary care), formal posttraumatic mental health supports and services, specialist posttraumatic mental health services, through to highly intensive posttraumatic mental health services. Section 5 describes the features of each tier including target populations, best and next practice interventions and evidence for the interventions, along with case studies to illustrate the needs of Veterans and families across tiers.

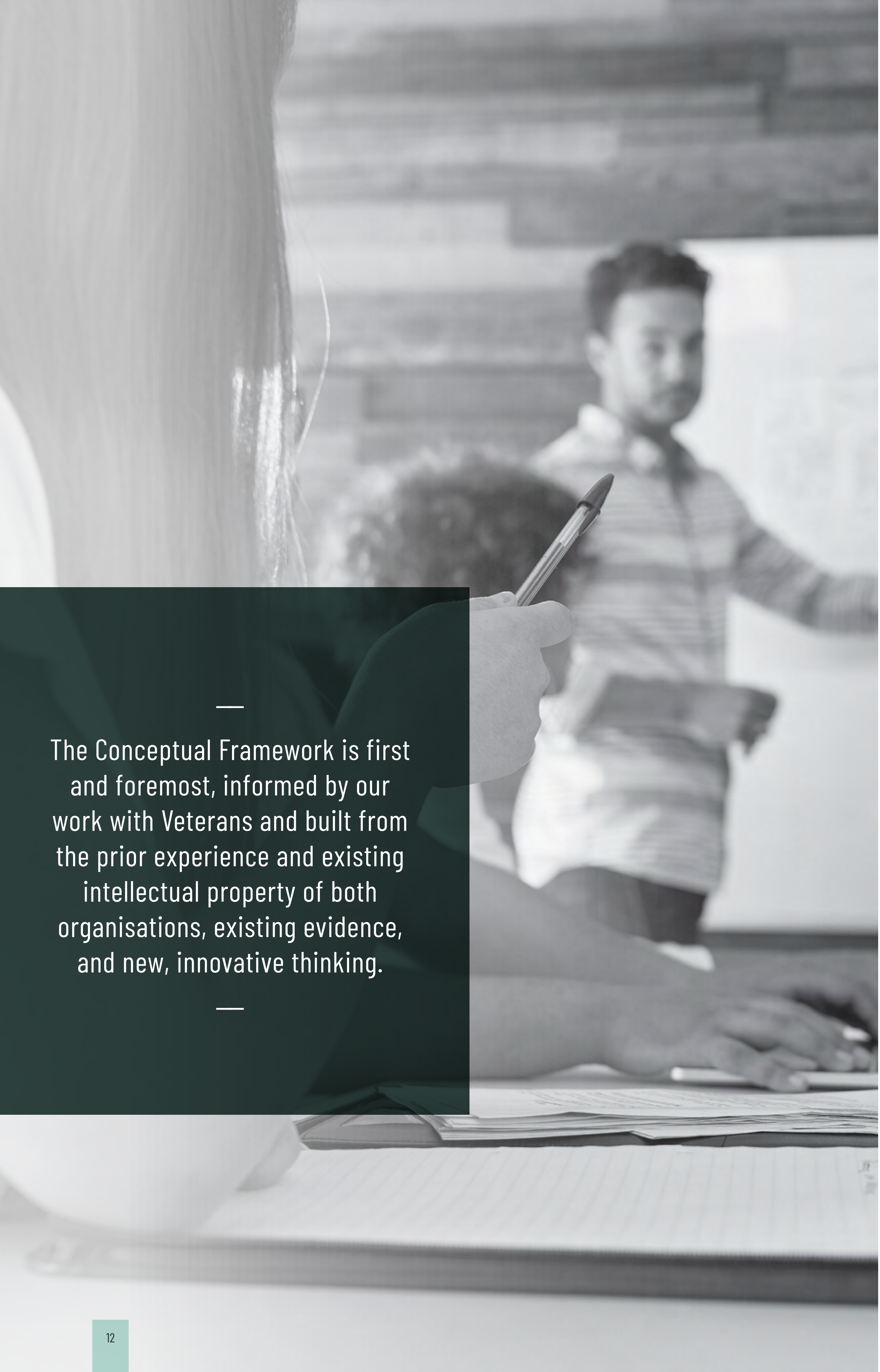
The features of acute or crisis care, accessible through all tiers, are also described. Most importantly, detailed case studies illustrate the optimum use of the stepped / matched model with respect to entry, navigation and care coordination.

Critical to improving outcomes for Veterans and their families is, of course, effective implementation of the stepped / matched model. Drawing upon the knowledge mobilisation and implementation literature, this is considered in Section 6. Knowledge mobilisation and implementation are part of an iterative cycle in which new knowledge informs practice, but also practice informs what knowledge is produced and how it can be most effectively applied. Specifically, while knowledge mobilisation is concerned with the way in which research evidence can be accessed and effectively used, implementation focuses on how service systems and routine practice can be transformed to increase access to evidence-based practice.

The focus of this section is the role of intermediary organisations in particular, in using knowledge mobilisation and implementation science to address two key challenges, bridging the gap between evidence and practice, and effecting change in complex systems. Challenges to effective implementation of best practice can arise at the practitioner, provider (organisation) and systems levels, as well as with Veterans and their families themselves. Six building blocks to effective knowledge mobilisation and implementation are identified as 1) nurturing leadership, 2) maximising collaboration, 3) building capacity and capability, 4) addressing inequity, 5) integrating adaptability, and 6) ensuring sustainability. Section 6 describes these building blocks in detail and provides case studies that illustrate their application in different settings to improve outcomes for service users.

In summary, the Conceptual Framework brings together an understanding of the diverse needs of Veterans and their families with knowledge of best practice approaches to mental health care to develop a stepped / matched model of care designed to optimise wellbeing outcomes. Implementation of the model is considered in light of best practice principles of knowledge mobilisation and implementation. We hope that the Conceptual Framework will be of value to all stakeholders committed to improving the wellbeing of Veterans and their families by providing rationale for and guidance on the design and delivery of services, recognising the role of individual players in the overall system of supports and services, and enhancing the coordination of care with the Veteran and their family always at the centre.

There is no doubt that the model and guidance on its implementation are aspirational but they are not unattainable. With the combined effort and commitment of the broad range of stakeholders that we have identified, optimisation of the support and service system for Veterans and their families can be achieved. This would be no more than a fitting recognition of the service and sacrifice that Veterans and their families have made on our behalf.



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The Conceptual Framework is first and foremost, informed by our work with Veterans and built from the prior experience and existing intellectual property of both organisations, existing evidence, and new, innovative thinking.

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2 Introduction

Many systems that support Veterans with their mental health needs emphasise high quality and accessible treatment as a high priority in their reform effort, and are working towards this goal. Whilst patches of good work exist, it remains a significant challenge for many systems globally.

This Conceptual Framework is intended to progress the conversation around high quality and accessible treatment for Veterans and their families and support further reform work. It is intended for anyone with an ability to influence outcomes for Veterans and their families – funders, insurers, policy makers, system managers, regulators, intermediary organisations, service providers, support organisations, practitioners as well as Veterans and their families themselves.

In addition, while this Conceptual Framework is informed by the Canadian and Australian military contexts, it is intended to be broadly applicable within Western, developed country contexts, to systems, services and supports provided to those suffering from psychological trauma. This might include first responders, emergency workers, other frontline workers or workers in other industries with a high risk of psychological trauma.

This introduction sets out the drivers behind developing a Conceptual Framework, why it is needed, its scope and the values that have underpinned its development.

2.1 The service and sacrifice of Veterans and their families

Military service is a unique occupation, requiring members to undertake tasks that would be demanded of few, if any, other citizens in our society. The armed forces operate within a hierarchical system that requires members to follow the orders of their superiors, usually without question. They do not enjoy the same freedoms as other citizens to make decisions independently and cannot choose whether or not they serve in armed conflicts, humanitarian missions, or other military deployments. The families of these servicepersons carry the responsibilities and burden along with the military members.

Military service is a high-risk occupation for physical injury and service-related illness, not only through combat and overseas deployments in hostile environments, but also through the demands of military life at home such as training and exercises. It is also a high-risk occupation for psychological injury. The very nature of their role places military members in situations that carry inherent risks to their physical safety and, indeed, to the lives of themselves and their colleagues, including exposure to Improvised Explosive Device (IED) attacks, ambushes, and suicide bombings among other things. In these environments, they may also experience traumatic personal loss through witnessing the serious injury or death of friends and colleagues. They are also at risk, particularly in humanitarian missions, of being exposed to horrific scenes of death and suffering of civilians, including women and children. They may be required to live for long periods in physically unpleasant or risky "malevolent environments" that involve, for example, heat, damp or insects.

Service personnel have the authority, under strict rules of engagement, to apply lethal force against enemy combatants – to injure or kill other human beings in certain circumstances. As the nature of warfare has changed over the years, it has become increasingly difficult to identify who is, and is not, an enemy combatant, creating enormous ambiguity and moral complexity in situations that may require an instant decision.

All of these situations are widely recognised as being potential "traumatic stressors" that may impact posttraumatic mental health and wellbeing.

Although people may join military service for a variety of reasons, it is generally accepted that, in return for forfeiting certain freedoms and being placed in high risk situations, they and their families will be looked after. For most serving members, the military provides for all of their basic needs in areas such as accommodation, nutrition and healthcare. As a result, that can mean that many servicepersons transitioning out of the military have had little or no experience in meeting some of those needs for themselves.

While most service members successfully transition and quickly re-establish civilian lives, in the event of a service-related physical or psychological injury, there is a widely held expectation of government support for members and their families, not only while people are still serving but also during their transition out of the military and throughout the remainder of their lives.

Veterans and their families, who have often sacrificed a great deal as part of their military service, deserve access to the best possible support and care. The unique nature of their service highlights the need for a specialised set of services and supports for themselves and their families. Society needs to keep its part of the bargain and to 'serve those who have served'.

2.2 Our focus on Veterans and our collaboration

Phoenix
AUSTRALIA
CENTRE FOR POSTTRAUMATIC MENTAL HEALTH

Phoenix Australia - Centre for Posttraumatic Mental Health is Australia's national centre of excellence in posttraumatic mental health. It's mission Understanding Trauma. Renewing Lives drives its focus and it has a vision to be:

- A world renowned leader in building the capability of individuals, organisations and the community to understand, prevent and recover from the adverse mental health effects of trauma.
- At the forefront of world's best practice in military, Veteran, national security and first responder mental health and wellbeing.

Established by the Department of Veteran's Affairs as the National Centre for War-Related PTSD in 1995, it now has over 25 years of expertise supporting Defence Force personnel and Veterans.

ATLAS INSTITUTE FOR VETERANS AND FAMILIES

Atlas Institute for Veterans and Families has been created to provide better access to information, research, tools and expertise on posttraumatic stress disorder and related mental health conditions.

Phoenix Australia and Atlas Institute share a common goal of improving mental health and wellbeing among current and past Defence Force personnel. These two organisations have entered into a formal collaboration to promote opportunities for sharing relevant information, as well as for joint initiatives in areas such as policy development, service improvement, training and research. The collaboration is intended to drive benefits for their respective governments, as well as other national governments, and most critically for the Veteran communities they seek to assist. Although people may join military service for a variety of reasons, it is generally accepted that, in return for forfeiting certain freedoms and being placed in high risk situations, they and their families will be looked after. For most serving members, the military provides for all of their basic needs in areas such as accommodation, nutrition and healthcare.

In this context, the development of a Conceptual Framework to guide the implementation of best and next practice in services and supports for Veterans and their families (Conceptual Framework) is one of the first outputs from this collaboration.

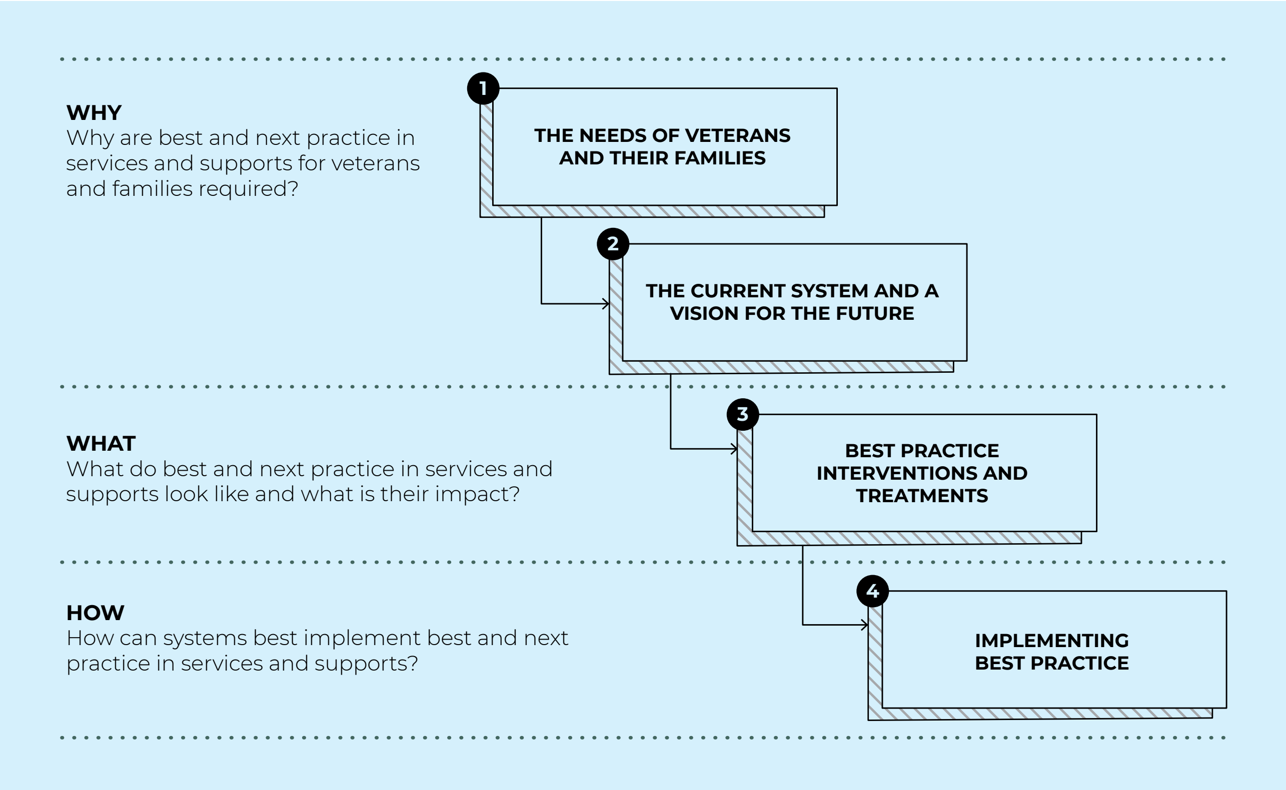
2.3 Objectives of this work and framework

The development of this Conceptual Framework is driven by our collaboration, our collective missions and desire to “serve those who have served” and provide the best possible support and care to Veterans and their families.

The Conceptual Framework is first and foremost, informed by our work with Veterans and built from the prior experience and existing intellectual property of both organisations, existing evidence, and new, innovative thinking.

The Conceptual Framework has four components:

The sections of the document are structured in line with these four components:



WHY
Why are best and next practice in services and supports for veterans and families required?

WHAT
What do best and next practice in services and supports look like and what is their impact?

HOW
How can systems best implement best and next practice in services and supports?

Component 1 is covered under Section 3 and addresses why best and next practice supports and services are required, describing the wellbeing and posttraumatic mental health needs and concerns of Veterans and their families.

Component 2 is covered under Section 4 and describes the current mental healthcare system, and associated challenges, and outlines a case for change. It proposes a vision for an optimal service system that address the needs of Veterans and their families.

Component 3 is covered under Section 5 and provides an overview of current best and next practice intervention models and treatment programs, and outlines a critical component of a high performing posttraumatic mental health system – a macro, stepped / matched model of care, with the evidence for effective interventions and treatment programs (EBPs) across different stages of the model and for various conditions.

Component 4 is covered under Section 6 and addresses how to best to implement the stepped / matched model of care and EBPs.

The Conceptual Framework is intended to:

1. Articulate a clear conceptual approach to improving the lives of Veterans and their families;
2. Provide an overarching design and 'scaffold' around which to build an effective system of services and supports that better meet the needs of Veterans and their families;
3. Provide a structure around which current and planned initiatives in service development can be considered;
4. Help determine where different systems are in relation to best and next practice services and supports;
5. Outline the best approach and path to get there, recognising the differing start points of various systems;
6. Offer a more general guide to developing future service innovation.

The Conceptual Framework is not intended as an analysis of current systems and their respective outcomes, nor a reflection or criticism of current approaches and policies of different countries.

This Conceptual Framework approaches the challenges of service and system implementation typically from an intermediary organisation perspective, although this does not mean it is not relevant to other stakeholders. An intermediary organisation in this context is an organisation – such as Phoenix Australia or Atlas Institute for Veterans and Families - that sits outside of both government and the service system and plays a role in building the capacity of others to improve outcomes for specific population groups.

Despite this specific focus around implementation, the Conceptual Framework is intended to be helpful to the broadest possible audience. For the range of stakeholders with an ability to influence the outcomes for Veterans and their families – funders, insurers, policy makers, system managers, regulators, intermediary organisations, service providers, support organisations, practitioners and individuals, families and communities themselves.

A fundamental premise of this Conceptual Framework is that Veterans and their families face a complex array of services and supports and, however disconnected the elements may be, from the perspective of Veterans and their families it constitutes a service system and should be acknowledged and approached as such by those that can influence it.

2.4 The scope of the framework

The Conceptual Framework has a specific scope. In the context of our collaboration and our collective missions the Conceptual Framework focuses on:

- A holistic and macro model of care along a wellness and treatment continuum.
- Veterans mental health and wellbeing services and supports within that continuum.
- Common posttraumatic mental health conditions for Veterans, including PTSD, depression, anxiety, substance misuse, as well as common associated problems such as sleep, pain, anger and aggression, and physical health comorbidities.
- Optimal, best and next practice interventions and treatments to address these posttraumatic mental health conditions and associated problems.
- Routine psychological and pharmacological therapies that are relevant in most service settings. This includes an acknowledgement of the potential system inequities in development of and access to pharmacological interventions for mental health. This framework provides equal weight to supporting development of evidence-based interventions across domains.
- The broader needs of Veterans and their families in obtaining help and support.
- The most appropriate system architecture (system level); culture, workforce, systems and processes (organisational level); and behaviours and competencies required at an individual practitioner level to support the implementation of best and next practice in mental health services for Veterans and their families.

2.5 Our shared values guiding this work

Phoenix Australia and Atlas Institute for Veterans and Families, are both values-driven organisations. Our values drive our behaviours and the approach to our work. They are an important frame for considering this Conceptual Framework. Our values include:

1. Being passionate about making a real difference to the wellbeing of people impacted by trauma, in this case Veterans and their families and in particular adopting a Veteran centric lens to design and implementation;
2. Addressing inequity in the context of Veterans mental health and wellbeing;
3. Being guided by scientific evidence and focusing on building a broad evidence base of what works;
4. Learning, adapting and being responsive to the changing needs of the communities we serve;
5. Building collaborations and collective solutions through systems thinking and strengthening strategic partnerships.

3 The needs of Veterans and their families

This section explores why best and next practice in services and supports for Veterans and their families are required. In doing so, it identifies the key posttraumatic mental health and wellbeing needs of Veterans and their families.

Key points from this section

Broad wellbeing framework that encompasses families
Posttraumatic mental health must be framed in a broad wellbeing framework that encompasses Veterans and their families. Within any wellbeing framework, family wellbeing domains provide an important wrap-around to individual wellbeing outcomes.

Equity and intersectionality
Taking an equity and intersectionality lens to a wellbeing framework ensures the intersecting nature of domains is also considered.

Defining posttraumatic mental health
Posttraumatic mental health is the state of wellbeing following exposure to a traumatic event and has as broad a focus as possible in supporting those exposed to significant stressors. It encompasses normal physiological and psychological responses, subsyndromal responses and specific posttraumatic mental health disorders such as posttraumatic stress disorder (PTSD), depression, anxiety and substance use.

Longtitudinal perspective
In terms of understanding overall wellbeing and specific posttraumatic mental health needs, it is important to adopt a longitudinal perspective; a whole of lifecycle approach that acknowledges trajectories of experience for individuals and families.

Heterogeneity of Veterans group
Exploring the nature of posttraumatic mental health needs in Veterans means recognising the heterogeneity of the group, and considering their etiological as well as key risk and protective factors.

"One size fits all" approach not enough
Not all Veterans (or all Veterans' families) are the same and a "one size fits all" to approaching mental health is not sufficient. Although their military experiences provide some commonality and contribute to shared risk factors, the Veteran population is highly heterogeneous in many ways, including across gender, ethnicity, sexual identity, religion, disability and age.

Complex influences of mental health
The development of common posttraumatic mental health conditions in Veterans is influenced by a complex interaction of biological, cognitive and psychosocial factors across various time points (pre-, peri-, and post-military) in the Veteran's history. This provides vital context to the nature of posttraumatic mental health needs in Veterans and their families.

Diverse mental health needs
Research highlights the diverse nature of posttraumatic mental health needs for Veterans, which in addition to diagnosable disorder and symptoms, also comprises

social and functional health and wellbeing. As well as formal diagnoses, related problems such as anger and aggression, guilt, social withdrawal and emotional numbing are common.

Mental health symptoms associations
Importantly, mental health symptoms, conditions and related physical health outcomes can be associated with substantial impairment in social functioning, occupational functioning and quality of life.

Transition from service increases risk
Transition from military service has been shown to be a time of increased risk for mental disorder with prevalence research internationally revealing approximately 25% report a mental disorder of some kind, most commonly anxiety, depression, PTSD and substance use disorders.

Comorbidity is the norm
Comorbidity is the norm rather than the exception. It is rare, for example, for Veterans to present for treatment with PTSD alone. It is most commonly comorbid with other mental health disorders such as depression, anxiety and substance use.

Pattern: symptoms increase over time
In terms of the course of disorder, a number of recent studies examining trajectories of symptoms over time demonstrate a general pattern of increasing symptomatic distress with the passage of time for some Veterans. High rates of disorder not just concurrent to service, but across the lifetime reflect the complex etiology of mental disorder emergence, progression and maintenance.

Impact for families
For families, the impact of their loved one's mental health condition can be considerable. Relationships with partners often become strained and fractured, and the Veteran's mental health condition can contribute to substantial difficulties for children, particularly during vulnerable developmental stages.

Little known about needs of families
Despite the obvious importance of family wellbeing to Veterans' mental health and wellbeing, surprisingly little is known about the nature and prevalence of mental health and wellbeing needs of Veterans' families. The cumulative toll of unmet needs may have deleterious consequences for family members and also for Veterans, with poorer health outcomes for family members and negative impacts on their ability to support the Veteran family member.

Military factors impacting wellbeing
The mental health and wellbeing of family members and the family unit may be impacted by a range of military factors including deployment, posting cycles and access to military specific supports. Military stressors including posting cycles, loss of support networks, financial stress, employment and housing strain have all been found to be associated with increased family dysfunction, intimate partner violence and child maltreatment in Veteran families.

Wellbeing impacts of spouse/partners
Studies of the prevalence of mental and behavioural health and wellbeing problems among spouse/partners of Veterans provide evidence of elevated rates of anxiety, depression and psychological distress, symptoms such as anger, and risky health behaviours including problematic alcohol consumption, poor physical fitness and sleep problems.

The role of family is critically important
The role of family in supporting the mental health and wellbeing of Veterans is critically important, so engaging them within systems of care and decision making about care is also crucial. Services and support to better equip families will have beneficial flow on effects to Veterans.

3.1 Wellbeing and posttraumatic mental health

The Wellbeing Framework for Veterans Affairs Canada and Phoenix Australia's Australian Veteran's Wellbeing Index (Dunt et al., 2019) both present a Veteran-centric model of wellbeing that situates posttraumatic mental health within a broader wellbeing context. The broader wellbeing context comprises a range of domains of individual and family wellbeing that interact with each other and should be considered holistically in determining needs and maximising recovery (J.M. Thompson et al., 2016).

The purpose here is not to fully articulate a wellbeing framework, but an example might include the elements as depicted in Figure 1.

Importantly in this wellbeing framework, and for the purposes of this overall Conceptual Framework, family wellbeing domains provide an important wrap-around to individual wellbeing domains. These include the life course stage of the family, core family activities such as caregiving, employment, education, and the interdependence of decision-making within family units. For the purpose of this framework, family can refer to both the more traditional definition of the family, encompassing parents, siblings, partners, children, as well as chosen family of close friends and peers.

The individual wellbeing domains have bi-directional associations where, for example, financial stress can create conditions for poorer mental health, or impede the ability to access care. Thus, it is critical to consider the domains holistically within service systems. Taking an equity and intersectionality lens requires that the intersecting nature of these elements be taken into account.

3.1.1 Posttraumatic mental health

Set within this overall wellbeing framework sits posttraumatic mental health. This reflects that an understanding of posttraumatic mental health and wellbeing for Veterans and their families must be placed in the context of a multitude of factors highlighted by this wellbeing framework.

Posttraumatic mental health is the state of wellbeing following exposure to a traumatic event. It is about wellness as much as it is about illness. It is about resilience and prevention as much as it is about early intervention and treatment.

Following exposure to significant stressors or potentially traumatic events, there are a range of normal physiological and psychological responses. These may include sleep disturbances, feelings of anger and guilt, psychological distress, social withdrawal, as well as more visceral physiological responses including hypervigilance to threat and emotional numbing. In the majority of individuals, these responses abate over time as the events are processed and integrated, and result in little functional impairment.

However, in some individuals these symptoms may signal more significant impacts and will worsen rapidly or gradually, resulting in the emergence of clinical disorders such as anxiety, depression and PTSD (e.g., Abdallah et al., 2019; S. K. Brooks, Rubin, & Greenberg, 2019; Alexander Cowell McFarlane, Lawrence-Wood, Van Hooff, Malhi, & Yehuda, 2017).

Central to any discussion of posttraumatic mental health, is PTSD. Although not formally recognised by the psychiatric community until 1980, when PTSD appeared for the first time in the diagnostic nomenclature, human beings have long been aware of the potential mental health effects of exposure to traumatic events.

The formal recognition of PTSD in 1980 was crucial in acknowledging the mental health effects of trauma as genuine psychiatric conditions worthy of legitimate study and the development of effective treatments. Perhaps more importantly, for the first time the diagnosis recognised that the mental health effects of trauma may continue long after the threat is removed and the stressor has terminated.

Figure 1: Elements of a Veteran and family wellbeing framework

Although the acceptance of PTSD did an enormous amount to stimulate research and refine treatments, the disadvantage was that the potential for other mental health conditions in the aftermath of trauma was largely ignored. In the last decade or so, however, a mounting body of research evidence has demonstrated that several other conditions may develop following traumatic exposure. In particular, depression has been recognised as the most common posttraumatic mental health condition in both military and civilian populations, with substance use disorders and anxiety disorders also prevalent. These conditions may develop in isolation from, or comorbidly with PTSD.

To re-iterate, posttraumatic mental health - the state of wellbeing following exposure to a traumatic event - encompasses all of the above and therefore has as broad a focus as possible in supporting those exposed to significant stressors or potentially traumatic events.

3.1.2 Whole of life-cycle approach and trajectories of experience

In addition to these domains and their intersection, it is important to also take a longitudinal perspective in the understanding of needs. A whole of life-cycle approach situates the wellbeing and needs of Veterans and families within the context of their life course and stage (J.M. Thompson et al., 2016). This includes their trajectories of experience across the life span, and the changing social, emotional and structural environment within which they sit at any point in time.

Adopting a whole of life-cycle approach to understanding wellbeing and needs involves considering mental health in the context of the Veteran’s experiences from birth through to the point at which they joined the military, their life in military service, and their life after service. The family context similarly may change over time, including the Veteran as an adult child, as a spouse/partner and as a parent. Each of these stages involves key transitions - for example, recruitment to and transition from military service, or the transition to parenthood - each of which brings with them particular challenges.

Both of these concepts – wellbeing (domains and intersections) and whole of life-cycle approach – provide a more comprehensive frame for both the posttraumatic mental health needs of Veterans as well as the associated needs of their families.

Before exploring the nature of posttraumatic mental health in Veterans it is important to understand both the heterogeneity of the group as well as key risk and protective factors for mental health and wellbeing.

3.2 Understanding Veterans in relation to posttraumatic mental health

Not all Veterans (or all Veterans' families) are the same and a "one size fits all" approach to mental health is not sufficient.

Although their military experiences provide some commonality and contribute to shared risk factors, the Veteran population is highly heterogeneous in many ways, including across sex, ethnicity, sexual identity, religion, disability and age (Murphy & Busuttil, 2019).

Taken together, the statistics overleaf highlight the diversity of Veteran populations across sex, age, ethnicity, religion, sexual identity and disability. These factors play an important role in understanding the mental health needs of Veterans, etiological considerations and how services and systems effectively address Veterans' needs.

Individuals who join the armed forces bring their own unique history and characteristics in terms of genetic predispositions, childhood experiences, developmental challenges, health and mental health status, and other life events. Coupled with their unique elements of identity these will all contribute to levels of vulnerability and/or resilience, as well as to levels of social and occupational functioning, before the person has been exposed to any kind of military experience. Those factors will continue to influence adjustment both during and following military service, with corresponding implications for treatment (Murphy & Busuttil, 2019).

The same applies to the Veteran's partner and family members, who will bring the same range

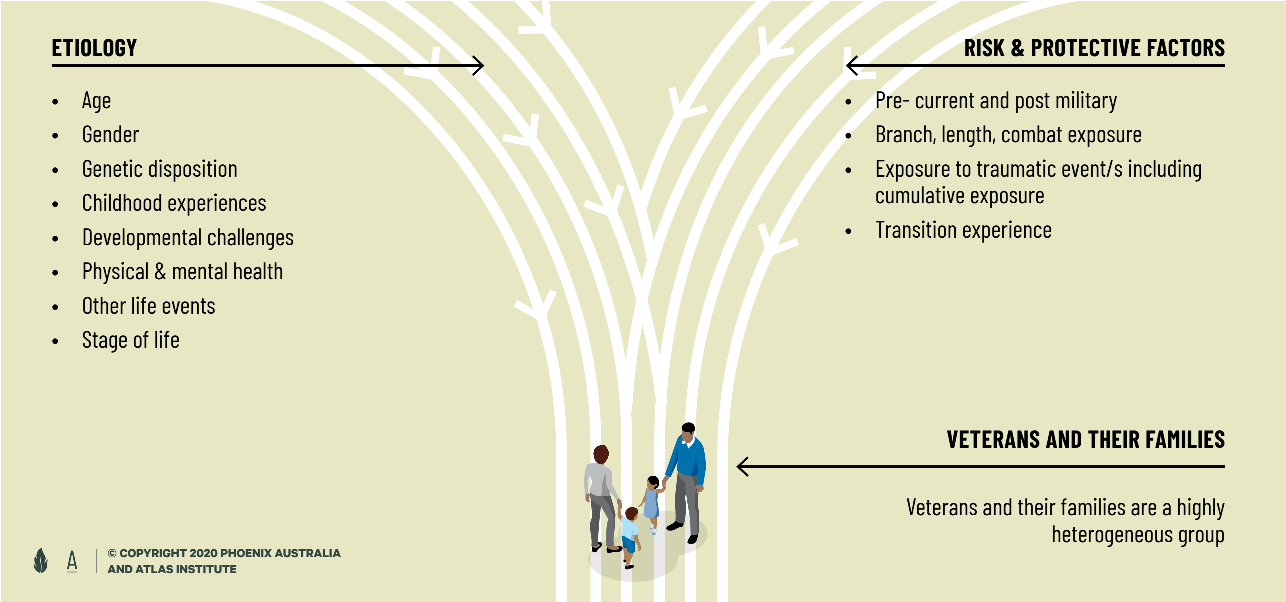


Figure 2: Etiological, risk and protective factors

Demographic characteristics of Veteran populations

Sex

With respect to sex, the majority of military members across countries are male, with around 10-20% being female. In the UK, 10.8% of the Regular Forces and 14.7% in the Future Reserves 2020 are women (**Ministry of Defence, 2019**). Women comprise 16.5% of the US DoD Active Duty force and 20.0% of the Selected Reserve force (**U.S. Department of Defense, 2018**). In the Canadian Armed Forces (CAF), 15.6% of Regular Force members and 16.5% of Primary Reserve members are women (**Canadian Department of National Defence, 2020**). The ADF permanent force comprises 18.6% women (**Australian Government Department of Defence, 2019**).

Age

In terms of age, 24.5% of the UK Regular Forces and 11.9% of the Future Reserves 2020 are under 25 years old. While 45.6% of US Active Duty members and 32.3% of Selected Reserve members are 25 years of age or younger. In the Canadian Armed Forces CAF Regular Force, 24.2% are between the ages 17 and 29, 39.5% are 30-39, 24.6% are 40-49, and 11.7% are 50+ years of age. In the Reserve Force, 40.7% are 17-29, 25.5% are 30-39, 17% are 40-49, and 16.8% are 50+ years of age. In the Australian Defence Force ADF, 43.0% are under the age of 30, while 52.0% are over 30 (5.0% no answer).

Ethnicity

With respect to ethnicity, Black, Asian and Minority Ethnic (BAME) representation in the UK Regular Forces is 8.2% and in the Future Reserves 2020 is 5.5%. In the US, nearly one-third (31.0%) of Active Duty members and one-quarter (26.1%) of the Selected Reserve members identify themselves as a racial minority (i.e., Black or African American, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multi-racial, or Other/Unknown). The CAF Regular and Primary Reserve populations combined include 8.1% from ethic minority groups, and 2.7% from indigenous heritage (**Fuhr, 2019**), while indigenous participation in the ADF consists of 3.0% of total permanent ADF personnel.

Religion

In relation to religion, in the UK, Christianity is the most declared religion (66.3% of the Regular Forces and 71.7% of the Future Reserves 2020), followed by no religion (30.5% and 25.8%), and other (3.3% and 2.5%). A range of religious beliefs exist within the ADF including Christianity (38.6%), Buddhism (0.8%), Hinduism (0.3%), Islam (0.2%), other religion (1.3%), and no religion (52.7%) (Australian Government Department of Defence, 2016). The Canadian Armed Forces doesn't routinely collect data on the race and ethnicity of its personnel, however in a 2019 report it was noted that visible minorities make up 8.1% of the force, and Indigenous peoples 2.7% (**Fuhr, 2019**).

Sexual identity and disability

Data on sexual identity and disability is only available for Australian serving members. Members identifying as LGBTI comprise 3.9% of the ADF, and 15.2% of the ADF have indicated they have at least one form of disability or chronic medical condition (**Australian Government Department of Defence, 2019**).

of antecedent risk and protective factors into the relationship which will continue to influence their individual adjustment, experiences and functioning and that of the family unit.

3.2.1 Risk factors and indicators

In terms of risk and protective factors for mental health problems in Veterans, a useful distinction has been made between factors and indicators:

- *Risk factors* are antecedents that contribute causally to the mental health condition, e.g., social isolation or traumatic exposure.
- *Risk indicators* are characteristics of subgroups in whom the mental health condition is more common but where evidence of causality remains uncertain, e.g., gender or age (American Psychiatric Association, 2013).

While numerous risk indicators have been identified, the causality of common mental health conditions in Veterans has yet to be fully explained and it is impossible to reliably disentangle military-related factors from other life experiences.

Exposure to a traumatic event is part of the diagnostic criteria for PTSD, for example, yet the majority of those exposed to potentially traumatic events do not develop PTSD. Thus, exposure to a traumatic event is a necessary but not sufficient risk factor in understanding individual risk for developing PTSD. Furthermore, PTSD is not the only, and not even the most common mental health outcome following trauma as will be discussed in the next section. Therefore, taking a perspective that considers risk indicators for posttraumatic mental health outcomes more broadly is important.

The risk factors for the development of mental health problems in Veterans are also not necessarily the same as the risk factors for chronicity (P. P. Schnurr, Lunney, & Sengupta, 2004). The question of why some people recover from military-related mental health problems relatively quickly, while others go on to experience chronic problems and functional impairment, has potentially important implications in a range of areas, and is discussed further in the following sections of this report.

In short, a wide range of risk factors and indicators – of which combat exposure is only one – will interact to influence the nature and severity of mental health adjustment as well as determine a Veteran's mental health and wellbeing and how they access and navigate service systems. These include:

- Pre-military factors;
- Military service factors;
- The family context; and
- Sociodemographics – age, stage of life, ethnicity, sex, gender identity, etc.

3.2.1.1 PRE-MILITARY FACTORS

It is important to take a whole-of-life approach to understanding the impact of military service on mental health adjustment (Syed Sheriff, Van Hooff, Malhi, Grace, & McFarlane, 2020). The individual's stage of life at the time of trauma exposures and recovery can contribute to their impacts. Many people joining the military do so at relatively young ages, and there is some evidence of greater prevalence of early life adversity among military populations (Syed Sheriff et al., 2020). Thus members will enter service with a varying level of background trauma upon which occupational exposures will accumulate. Childhood trauma and adversity in particular is a known contributor to risk of a range of mental disorders in adulthood. Lower educational attainment, and lower socioeconomic status also convey background risk in relation to service and post-service mental health adjustment and outcomes, and should be considered in understanding posttraumatic mental health holistically against each Veteran's history and background.

3.2.1.2 MILITARY SERVICE FACTORS

In terms of their military career specifically, each Veteran's experience will be unique, with a multitude of factors potentially influencing longer term adjustment. These include deployments in relation to number, duration, type (to war zones, or as peacekeepers) and exposure to stressful or potentially traumatic events. There is clear evidence, for example, of a "dose response" relationship between the number and severity of potentially traumatic exposures, as well as the length of deployment, and subsequent adjustment and mental health problems (Brewin, Andrews, & Valentine, 2000; Davy, 2012; Dohrenwend et al., 2006; Lawrence-Wood et al., 2019; Rona et al., 2014).

Branch of service, occupational role and length of service also contribute to mental health (Crum-Cianflone, Powell, LeardMann, Russell, & Boyko, 2016; A.C McFarlane, Hodson, Van Hooff, & Davies, 2011; Rebeira, Grootendorst, & Coytec, 2017; J. M. Thompson, Sweet, VanTil, Poirier, & MacKinnon, 2016; M Van Hooff et al., 2018). For example, rates of mental health conditions are typically higher among those of lower ranks, infantry based roles and land based forces (cf. the Air Force, where the lowest rates are generally observed). Further, length of military service has been found to be associated with adjustment, with shorter service often associated with poorer mental health outcomes. The better mental health amongst longer serving personnel may reflect a bias in retention of those without mental health problems. However, longer length of service also brings with it an increase in the extent of possible traumatic exposures with the passage of time.

Military culture itself, will also be experienced differently for each individual based not only on factors such as deployments, service branch, role and rank, but also against their life background and history. For some individuals, the rigid structures and hierarchy of the military will function as a close-knit and supportive family proxy, while for others it will be characterised by criticism and rejection.

Similarly, the experience of transition from military service will also be varied. The process of transition out of the military can be a simple and satisfying time for some, with adjustment to civilian life an exciting and successful challenge. While for others, especially those being discharged against their will or for medical reasons, it may be characterised by conflict, disappointment, and feelings of betrayal. Here, transition to civilian life can include a series of unmet expectations, failures, and seemingly insurmountable hurdles, often exacerbated by perceived stigma and rejection (M Van Hooff et al., 2018).

3.2.1.3 THE FAMILY CONTEXT

The network of family and friends that surround Veterans is integral to their experience and navigation of military and post-military life. There is evidence of the importance of family as a source of positive social support for Veterans at all stages of experience, including potentially buffering against negative mental health outcomes (Adams et al., 2019; Farero, Blow, et al., 2019). Likewise, the experience of service, deployment and transition for Veterans will inevitably contribute to the relationship dynamic with their partner and family. At times, associated stresses and strains can damage relationships, contribute to family breakdown and, at worst, result in violent and abusive behaviour within families (Elbogen et al., 2010; Savarese, Suvak, King, & King, 2001). The experience of deployment and posting cycles, and the associated separations and upheaval, can be distressing and disruptive to Veterans themselves and their family members. The immediate and long term impacts can be profound, and may include physical and emotional injury, upheaval to family structure, and loss of social and emotional support (Elbogen et al., 2010; Savarese et al., 2001). The needs of Veterans are inextricably linked to those of their family members and vice versa, and any consideration of this requires a system inclusive of the family unit.

3.2.1.4 SOCIODEMOGRAPHIC FACTORS

As highlighted above, beyond pre-military, military, and post-military factors, multiple sociodemographic differences exist across Veteran and partner populations that can both individually and collectively contribute to mental health and wellbeing needs.

Age and stage of life

An important issue to consider is age and ageing, with Veterans ranging from their early 20's through to late old age. The health and mental health challenges, along with day-to-day needs and expectations, are very different for a Veteran or partner in their 20's compared to someone in their 80's.

Considering how age may contribute to health and wellbeing needs, as well as overall health morbidity and mortality, across the lifespan is important. Evidence of increased mental and physical health burden, impaired functioning and reduced quality of life among Veteran populations as they age has been found in numerous international studies (Maynard, Trivedi, Nelson, & Fihn, 2018; Ryder, Azcarate, & Cohen, 2018; M.-L. Sharp, Busuttil, & Murphy, 2019; Stefanovics, Potenza, & Pietrzak, 2018; Thomas, Harpaz-Rotem, Tsai, Southwick, & Pietrzak, 2017). Among Australian Vietnam Veterans, for example, O'Toole et al. (2009) found that as they aged, Veterans had poorer general health and worse health risk factors when compared to the general population. This included mood and behavioural problems, but also conditions like infectious and parasitic diseases, and diseases of the nervous system, eye and adnexa, circulatory system and respiratory system.

Age and stage of life also intersect with other factors such as family context, adding to the specific needs they have. For example, younger Veterans will be more likely to have young families or to be single. Older Veterans may have family responsibilities that extend to caring for grandchildren, or possibly for other family members such as elderly spouses or partners. Understanding how these contextual factors may pose particular challenges and impacts on healthcare needs is important to consider.

Race and ethnicity

While in the Australian context, ethnic and racial minorities make up a very small proportion of the Veteran population, in other jurisdictions the proportion is higher, with around 8% in the UK and Canada, and approximately 30% in the US. Race and ethnicity has been shown to impact on mental health and wellbeing, with elevated rates of poor mental health amongst racial and ethnic minorities. For PTSD in particular, there is evidence of elevated rates among racial and ethnic minorities, in particular African Americans (Alegria et al., 2013; Koo, Hebenstreit, Madden, & Maguen, 2016; Roberts, Austin, Corliss, Vandermorris, & Koenen, 2010; M. M. Steenkamp et al., 2017) and generally lower risk among Asian and Caucasian populations (Alegria et al., 2013; Roberts et al., 2010). It is likely that these differences reflect elevated rates of trauma exposure among racial and ethnic minorities (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Furthermore, socioeconomic disparities in relation to race and ethnicity, and other intersecting elements of identity such as gender, may also more generally contribute to inequities in access to appropriate services to meet health and wellbeing needs, further contributing to elevated disorder rates. For example, Maguen et al. (2012) found that female Veterans with PTSD were more likely to be black and single – both factors that can additionally influence mental health needs and outcomes.

Sex

In this section, where we refer to men and women we are referring to cisgender men and women, meaning that their gender identity corresponds with their birth sex, unless otherwise specified. Biological sex has become the focus of increasing attention in Veteran mental health research as greater numbers of women join the armed forces. Women are not only exposed to similar experiences to men in the military (especially if they are in combat roles), but are also at much greater risk of other potentially traumatic experiences such as sexual assault, all of which contribute to risk of mental disorder (Goldstein, Dinh, Donalson, Hebenstreit, & Maguen, 2017; Jones & Hanley, 2017). There is some evidence of sex differences in responses to traumatic stress. More generally, women have been found to be at greater risk for disorders such as PTSD (Kovacevic et al., 2020; Tannahill et al., 2020; Tolin & Foa, 2006). Among active duty military personnel, Hourani et al. (2015) found women reported more distress in relation to their mental health symptoms, and were more distressed by particular types of combat experiences involving hurt, when compared to men. However, history of sexual abuse was a predictor of poorer mental health outcomes among men compared to women. In their examination of military sexual trauma specifically, Tannahill et al. (2020) found that women were at greater risk for PTSD, and men were more likely to report suicidal ideation and behaviour. There were no differences in rates of depression.

Transgender identity and sexual orientation are also important to consider and have been found to impact mental health needs and outcomes among military populations.

Transgender identity

Shipherd et al. (2011) found that transgender individuals exposed to potentially traumatic events were more likely to report clinically significant symptoms than trauma-exposed samples of men, but similar to trauma-exposed samples of women. Lindsay et al. (2016) examined the mental health of transgender Veterans of the Iraq and Afghanistan conflicts who experienced military sexual trauma (MST). In this sample, the authors found significant likelihoods of being diagnosed with PTSD and a personality disorder among transgender men who experienced a MST. Among transgender women, MST significantly increased the likelihood of depressive disorders, bipolar disorder, PTSD, and personality disorders. Beckman et al. (2018) also examined mental health outcomes in transgender Veterans exposed to military sexual assault (MSA) and found significant associations between MSA and past month PTSD symptom severity, current depressive symptom severity, and past-year drug-use.

Sexual orientation

A number of studies have examined the mental health characteristics of Veterans according to sexual orientation. In general, those from sexual minorities have higher rates of symptoms and disorder. For example, Pelts et al. (2015) found that Veterans who identify as lesbian, gay, bisexual, or unsure, had higher levels of mental health symptoms and treatment. Cochran et al. (2013) found that LGB Veterans were more likely to screen positive for PTSD, depression, and alcohol problems compared to the comparison sample. In particular, anxiety around concealment of sexual orientation (while in service) was related to current depression and PTSD symptoms. McDonald et al. (2020) also found that a greater proportion of lesbian, gay, and bisexual solider (as compared to heterosexual soldiers) screened positive for anxiety, PTSD, and suicidality. The extent to which the observed relationship between sexual orientation and mental health is mediated by rates of exposure to potentially traumatic events needs to be considered. Roberts et al. (2010) examined sexual orientation disparities in trauma exposure and PTSD onset. In this study they found that lesbians and gay men, bisexuals and heterosexuals who reported any same sex sexual partners had a greater lifetime risk of number of traumas (childhood, IPV, unexpected death of loved one). Further they found that risk of onset of PTSD was higher in these groups, as compared to a heterosexual reference group.

In summary, Veterans and their families constitute a highly diverse group with a broad range of mental health and wellbeing needs. The development of common posttraumatic mental health conditions in Veterans is influenced by a complex interaction of biological, cognitive and psychosocial factors across various time points (pre-, peri-, and post-military) in the Veterans history. This provides vital context to the nature of posttraumatic mental health needs in Veterans and their families.

3.3 Nature and prevalence of posttraumatic mental health needs in Veterans

Increasingly, research highlights the diverse nature of posttraumatic mental health, which in addition to diagnosable disorder and symptoms, comprises social and functional health and wellbeing.

As well as formal diagnoses, related problems such as anger and aggression, guilt, social withdrawal and emotional numbing are common. Importantly, these mental health symptoms, conditions and related physical health outcomes are associated with substantial impairment in social functioning, occupational functioning and quality of life.

3.3.1 Sub-syndromal posttraumatic mental health conditions

The issue of sub-syndromal presentations across disorders is important to consider. Subthreshold, subclinical or sub-syndromal symptoms refer to cases where a number of symptoms are present, but the symptoms do not meet diagnostic criteria.

Most research into sub-syndromal symptoms in Veterans has focused on PTSD. Studies have found lifetime prevalence rates of sub-syndromal PTSD ranging from 6.6% to 22.5% in military personnel (Grubaugh et al., 2005). The Transition and Wellbeing Research Programme recently examined mental health in current serving Regular ADF members compared to a group who recently transitioned from the ADF. This research generally found that prevalence of sub-syndromal PTSD was higher for the Transitioned ADF than the Regular ADF and increased over time for both groups.

In 2010, 19.6% of Transitioned ADF and 14.9% of Regular ADF reported sub-syndromal PTSD symptoms, which increased for both groups at 5-year follow-up (Transitioned ADF 25.0%, Regular ADF 17.1%). Further, this Programme examined a second longitudinal cohort, the Impact of Combat cohort, that deployed to the Middle East Area of Operations between June 2010 and June 2012 (Lawrence-Wood et al., 2019) and also found increased prevalence over time (7.1% at pre-deployment, 13.4% at post-deployment, 21.7% at 3-4 year follow-up).

Sub-syndromal PTSD can take a chronic course with an average duration of up to 10 years (R Pietrzak, Goldstein, Southwick, & Grant, 2011) and is associated with increased incidence of psychiatric comorbidity, problematic alcohol use, reduced quality of life, functional impairment and suicide (Chen et al., 2020; Cukor, Wyka, Jayasinghe, & Difede, 2010; Jakupcak et al., 2011; Marshall et al., 2001; C Zlotnick, Franklin, & Zimmerman, 2002). Risk of full PTSD is also increased when sub-syndromal symptoms are present (Fink et al., 2018; Smid, Mooren, van der Mast, Gersons, & Kleber, 2009; Utzon-Frank et al., 2014).

Sub-syndromal depressive symptoms have received little attention in Veteran populations. Studies in the general population vary widely in their reported prevalence of sub-syndromal depression as a result of differences in operational definitions, however, they generally range from 1.4% to 17.2% (Rodríguez, Nuevo, Chatterji, & Ayuso-Mateos, 2012). The Transition and Wellbeing Research Program found increased prevalence of sub-syndromal depressive symptoms in recently transitioned personnel compared to currently serving members. In 2010, 23.6% of Transitioned ADF and 16.1% of Regular ADF reported sub-syndromal depressive symptoms, which increased to 33.6% for Transitioned ADF and 29.6% for Regular ADF at 5-year follow-up. Sub-syndromal depressive symptoms also increased in the Impact of Combat cohort following deployment and at follow-up (7.7% at pre-deployment, 12.4% at post-deployment, 27.9% at 3-4 year follow-up). Sub-syndromal depression is associated with increased clinical comorbidity, functional decline, higher healthcare service utilisation and increased mortality (**Gilbody et al., 2017**). Further, presence of s sub-syndromal depression symptoms is highly predictive of development of Major Depressive Disorder (MDD) (**Klein, Schwartz, Rose, & Leader, 2000**).

Taken together, there is substantial evidence that sub-syndromal symptoms across the spectrum of PTSD, anxiety and depression are associated with significant levels of functional impairment and distress in their own right (**Judd, Paulus, Wells, & Rapaport, 1996**; **Karsten, Penninx, Verboom, Nolen, & Hartman, 2013**), and represent a risk for further escalation of symptoms and development of disorder with the passage of time (**O'Donnell et al., 2013**; **E. Pietrzak, Pullman, Cotea, & Nasveld, 2013**).

It is also possible that individuals experiencing sub-syndromal symptoms may be less likely to be receiving treatment by virtue of being undiagnosed (**Marshall et al., 2001**). Importantly, some sub-syndromal symptoms

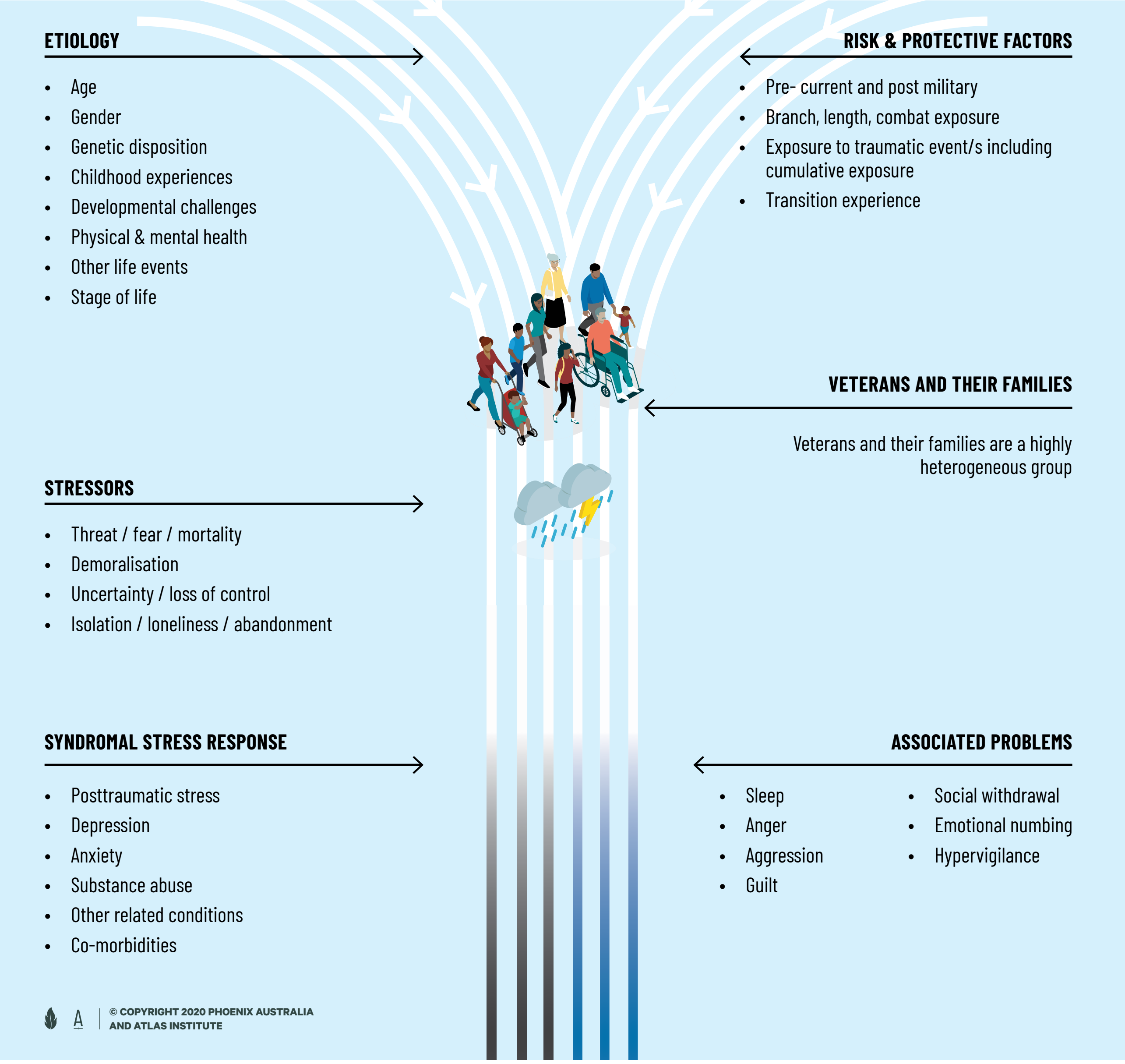


Figure 3: Stressors and Syndromal Stress Responses and Associated Problems on the Backdrop of Etiological, Risk and Protective Factors

may be less entrenched and more susceptible to brief interventions than fully established mental disorders (Haller & Chassin, 2014; A C McFarlane, 2017; J. Scott et al., 2013). Therefore, systems and services that facilitate early identification of symptoms and encourage Veterans to seek treatment for them are important.

3.3.2 Posttraumatic mental health disorders

By its nature, prevalence data refers to specific diagnosed disorders. As explored previously, it is a complex area, with prevalence rates varying enormously depending on a broad range of factors. Methodological differences in data collection complicate this further. However, the following provides key findings with regard to prevalence of the main psychiatric conditions and suicidality, as well as PTSD specifically in Veterans.

While PTSD tends to be the most widely discussed mental health disorder affecting military and Veteran populations, other conditions are equally important, with elevated rates of anxiety, depression and substance use disorders well documented. Internationally the figures for mental disorder prevalence among Veterans vary widely, and they are commonly higher than in matched community samples (Forbes et al., 2019).

The Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5) describes PTSD as having four symptom clusters: (1) re-experiencing the traumatic event, including recurring intrusive memories, flashbacks, or dreams of the trauma; (2) intentional avoidance of traumatic memory triggers; (3) changes in mood and/or thoughts, such as feelings of anxiety, sadness, shame or anger, negative thoughts about the self or others, or emotional numbing; and (4) hyperarousal in the form of irritability, hypervigilance, and trouble with concentration and sleep (American Psychiatric Association, 2013). The DSM-5 also introduced a dissociative subtype characterised by high levels of either depersonalisation or derealisation.

> While PTSD tends to be the most widely discussed mental health disorder affecting military and Veteran populations, other conditions are equally important.

The ICD-11 PTSD criteria are somewhat simpler, focusing on the three symptom clusters of re-experiencing, active avoidance, and hyperarousal (Maercker et al., 2013). The ICD-11 includes a second diagnosis of Complex PTSD that overlaps with some of the broader range of symptoms in DSM-5 PTSD diagnostic criteria, such as difficulties with emotion regulation and negative beliefs about the self and others. While the disorder can exist in mild forms, PTSD in Veteran populations can often become a chronic disorder resulting in substantial functional impairment and reduced quality of life (Australian Centre for Posttraumatic Mental Health, 2013; Bruffaerts et al., 2012; Schnurr, Lunney, Bovin, & Marx, 2009).

A further important consideration outlined previously is the elevated incidence of delayed onset PTSD in Veteran populations, with the disorder often not emerging until many years post-service. Recent Australian findings highlighted the significance of emerging psychiatric morbidity in the period up to 5 years post-service (Lawrence-Wood et al., 2019; M Van Hooff et al., 2018). This has important implications for how service systems are designed to identify and manage the mental health of Veterans.

Traumatic loss has been found to be associated with increased risk for PTSD, with rates double to triple in civilian cohorts. Traumatic loss of a loved one, friend or colleague is often reported as more distressing than other trauma types, and within military populations specifically, there is some evidence of increased symptoms of complicated grief, PTSD and functional impairment among those reporting the death of a fellow service member (Jongedijk, van der Aa, Haagen, Boelen, & Kleber, 2019). Therefore, prolonged grief disorder in relation to this is an important issue to consider in Veteran populations.

When considering exposures within the deployed environment, and their consequences, the issue of Traumatic Brain Injury (TBI) is of particular relevance to contemporary Veteran populations with significant psychological, social and functional burdens of TBI for both Veterans themselves, and those who care for them (Brickell, Lippa, et al., 2019). Common exposures within the deployed environment (e.g., blast from IEDs) are a risk factor for TBI, and although there has been extensive research into TBI in military samples, the nature of this injury type, the context in which it occurs, and the high level of comorbidity with conditions such as PTSD, makes it difficult to accurately assess prevalence. Nevertheless, rates of TBI among Veteran populations are higher than in the community, and are associated with structural, physiological, and/or functional changes in the brain that can lead to immediate and longer term neurological, cognitive and behavioural symptoms (Jeter et al., 2013; Oehr & Anderson, 2017). There is emerging evidence that even mild TBI may place individuals at risk of future physical and psychological morbidity (E. Pietrzak et al., 2013; RH Pietrzak et al., 2014).

Regarding all mental disorders, prevalence estimates vary substantially, although there are some consistent patterns. In general, rates of anxiety disorders (which includes PTSD) and depression are elevated, particularly among deployed cohorts. Alcohol use disorders show a more variable pattern, with UK and US military samples generally showing elevated rates among military compared to community samples, while Australian, Canadian and New Zealand studies have shown lower rates among currently serving personnel.

The most recent data from Australia shows a lifetime prevalence of 54.1% for common mental disorders (including anxiety, affective or alcohol use) among currently serving ADF members (A.C McFarlane et al., 2011). 12-month prevalence was 22.0%. The most common lifetime disorder class was alcohol disorders (35.5%), followed by anxiety disorders (which included PTSD) and affective disorders. The most common class of 12-month disorders was anxiety disorders (14.8%), followed by affective disorders (9.5%) and alcohol disorders (5.2%). Recent Canadian data from regular serving military personnel found rates of past year major depressive episodes of 8.0%, generalised anxiety disorder of 4.7%, suicidal ideation of 4.3%, and alcohol use disorders of 4.5% (Rusu, Zamorski, Boulos, & Garber, 2016). With the exception of alcohol use disorders, all rates were higher than a matched civilian population.

A UK study of a cohort of 9990 British forces Veterans, utilising self-report measures, found a prevalence of any probable mental disorder of 19.7%, alcohol disorder 13.0% and probable PTSD 4.0% (Fear et al., 2010). In a sample of currently serving German military personnel, non-deployed soldiers were found to have a lower 12-month prevalence of any disorder compared to civilians (14.4% vs 20.0%), with rates slightly elevated among deployed soldiers at 16.6%, but still lower than the community (Trautmann et al., 2017). In terms of specific disorders and disorder classes, any anxiety disorder was 12.1% among deployed members and 9.8% among non-deployed members. Mood disorders were lower with 4.4% among deployed and 3.7% among non-deployed, while alcohol disorder was 3.4% among deployed and 2.3% among non-deployed. Interestingly, in this German sample, disorder rates for all disorder classes were lower than the general population. However, deployed personnel with high combat exposure were found to have elevated rates of PTSD and panic/agoraphobia, a finding consistent with other militaries.

Importantly, transition from military service has been shown to be a time of increased risk for mental disorder. Prevalence research internationally reveals a wide range of estimates for mental disorder among transitioned military populations, with approximately 25% reporting any mental disorder, 13% to 39% reporting PTSD, approximately 40% reporting anxiety, 17% to 41% reporting depression and 6% to 38% reporting substance use disorders (Dedert et al., 2009; Fulton et al., 2015; Sayer et al., 2017; Seal, Bertenthal, Miner, Sen, & Marmar, 2007). In recent Australian research, among those recently transitioned from active service, lifetime and 12-month rates of alcohol disorders (47.5%; 12.9%), anxiety disorders (46%; 37%) and affective disorders (40%; 23.1%) were all found to be substantially higher than those observed in active serving ADF members (M Van Hooff et al., 2018). The 12-month PTSD prevalence of 17.7% among Transitioned ADF members was more than double that observed in the currently serving ADF.

Best estimates of PTSD among Veterans specifically indicate around 8% lifetime and 5% current prevalence (D. Forbes et al., 2019) with rates substantially higher among deployed and combat exposed populations (up to 35%) and among those who transition from active military service (between 13% and 39%). As can be seen with these ranges, there are substantial differences in estimates internationally. For example, in Australia the lifetime and 12-month prevalence of PTSD among currently serving ADF members was 16.9% and 8.3% respectively (M Van Hooff et al., 2018). Canadian data showed a prevalence of

In Australian research, rates of alcohol, anxiety and affective disorders in those recently transitioned from active service, were all substantially higher than those observed in active serving

current (30 day) PTSD of only 2.3% (Rusu et al., 2016). Similar figures were found in US and UK samples using self-report data: prevalence of current probable PTSD was estimated at 2.4% and 4.0% respectively (Fear et al., 2010). In a sample of deployed and non-deployed German military personnel, rates of 12-month PTSD were 2.8% and 1.2% respectively (Trautmann et al., 2017). The great variation across countries and studies regarding PTSD specifically highlights the difficulty in determining true disorder prevalence.

3.3.2.1 COMORBIDITIES

It is rare that Veterans present for treatment with, for example, PTSD alone and comorbidity with other psychiatric disorders such as depression, anxiety disorders and substance use disorders is the norm rather than the exception (Head et al., 2016; S. M. Smith, Goldstein, & Grant, 2016).

The broad combination of symptoms, such as excessive worry, substance abuse, suicidality, insomnia, nightmares, emotional numbing, hypervigilance and anger, also inevitably places enormous strain on partners and children. It is clear that mental health service systems established for Veterans and families need to take a broad approach to the treatment of psychiatric morbidity.

The issue of mental disorder comorbidity is important as it is a marker of the severity of disorder and presents a significant challenge in obtaining optimal treatment outcomes, particularly when the comorbid disorder(s) are not clearly defined from the outset (Hruska, Irish, Pacella, Sledjeski, & Delahanty, 2014). Findings related to mental disorder comorbidity in military members who transition out of active military service have important implications from a clinical perspective, including the need to upskill both military and civilian clinicians on the specific criteria of a broad range of disorders beyond depression and PTSD.

As discussed earlier in this section, PTSD and other common mental disorders are often associated with a range of other health problems. Strong evidence exists for increased risk of cardiovascular, metabolic, inflammatory and musculoskeletal disorders among patients with PTSD, with a range of chronic physical health conditions, medically unexplained somatic symptoms and chronic pain commonly seen in clinical presentations (National Institute for Clinical Excellence, 2018; Ryder et al., 2018). Furthermore, sexual dysfunction can also be a significant problem among those with PTSD (Letica-Crepulja et al., 2019). Again, high levels of physical morbidity inevitably adds another level of stress to interpersonal relationships and the family unit. While the understanding of the causal relationships between PTSD and physical health is poor (Alexander Cowell McFarlane et al., 2017), the fact that health problems are so common in Veterans with PTSD has important implications for health service design. Extensive research has also demonstrated that physical symptoms and conditions may in fact be the primary presenting problems in those with PTSD and other psychological disorders (Nichter, Norman, Haller, & Pietrzak, 2019).

In addition to more typical psychological symptoms, the high levels of physical health symptoms and conditions among Veterans in in particular (e.g., chronic pain) has been an area of increasing interest. Evidence suggests that stressors and traumatic events may have physical as well as psychological impacts, thus in considering mental health needs, these cannot be completely isolated from related physical health (Alexander Cowell McFarlane et al., 2017; Mota et al., 2019).

3.3.2.2 DISORDER COURSE

With regard to symptom and disorder course, a number of recent studies examining trajectories of symptoms over time among Veterans demonstrate a general pattern of increasing symptomatic distress among some Veterans with the passage of time (Armenta et al., 2019; Lawrence-Wood et al., 2019; Porter, Bonanno, Frasco, Dursa, & Boyko, 2017; Reijnen, Rademaker, Vermetten, & Geuze, 2015). A significant concern, and a key issue for any Veterans' mental health service system, is that most Veterans do not present for treatment until many years after discharging from the military. In some cases, this may be a function of delayed onset. Veteran and military populations, for example, show the highest rates of delayed onset PTSD (Andrews, Brewin, Philpott, & Stewart, 2007). In relation to PTSD specifically, data from longitudinal follow-up studies suggest that only slightly more than half of people with PTSD eventually remit and many of those report ongoing residual symptoms (A. C. McFarlane, 2000; McLaughlin, Conron, Koenen, & Gilman, 2010; Perkonigg et al., 2005). Severity of symptoms and comorbidity with other mental and substance use disorders, as well as the number and type of traumas experienced, are all associated with a more chronic course of PTSD (Kolassa et al., 2010; A. C. McFarlane, 2000; C. Zlotnick et al., 2004). Since high comorbidity and multiple trauma exposures are characteristics of Veterans with mental health problems, a chronic course is likely in this population. Considering this against the background risk factors discussed above highlights the importance of viewing Veteran mental health in a holistic manner, acknowledging that those Veterans at the greatest risk of chronic disorder course and poor prognosis are also likely to carry a constellation of risk (e.g., younger, males, ethnic minorities from poorer socioeconomic backgrounds).

Early identification of symptoms and disorder, and early intervention, is critical to mitigate the risk of chronicity. In relation to this, while a proportion of PTSD cases may be truly delayed onset, in many cases onset may have actually been many years earlier, with treatment not sought until much later by which time the condition has become chronic and accompanied by multiple associated psychosocial and functional impacts.

In support of this proposal are Australian findings showing that a large proportion of ADF members who had left active service but were not medically discharged met criteria for a mental disorder in the previous 12 months (i.e. 62.3% of those with a 12-month affective disorder and 70.5% of those with 12-month PTSD) (M Van Hooff et al., 2018). While some of this morbidity can be explained by delayed onset and emerging disorder, many of these individuals may not have been referred to the appropriate mental health providers at the point of transition. Similarly, a large proportion of transitioned ADF members who met criteria for a 12-month mental disorder were not recorded as a Department of Veterans' Affairs (DVA) client, meaning that they were not receiving treatment funded by the Department (M Van Hooff et al., 2018). This raises important questions as to whether these disorders emerged following discharge or failed to be declared or identified during the discharge medical. Taken together these findings suggest a need to address how military members are screened, assessed and monitored for mental health conditions both pre- and post-transition. The data also reinforce the importance of implementing a range of initiatives to enhance early identification and intervention, including through the transition process.

On the positive side, delay to treatment seeking may be reducing. A recent Canadian study, for example, found time to care for the 2009/2010 era was three times shorter than the 2002/2004 era (Boulos & Zamorski, 2016). UK research suggests an increase in the numbers of Veterans coming forward for support for mental health difficulties and substantially shorter delays in accessing care (D. Murphy & Busuttil, 2018). Similarly, a 2017 study revealed that most Australian Veterans sought care within a year of symptom onset, with only 18% delaying more than three years (D Forbes et al., 2018). Despite these encouraging findings, it is clear that early engagement in effective treatment will be a significant challenge for any Veteran mental health service.

3.3.2.3 SUICIDALITY

Suicidality is an area of intense interest and concern in relation to military populations. In most jurisdictions, suicide rates among serving members tend to be lower than the general community, suggesting the possibility of protective factors associated with active military service. However, the risk increases as individuals transition out of active military service, with suicide rates of ex-serving Veterans generally considerably higher than community rates (Australian Institute of Health and Welfare, 2019). Suicidality more broadly (ideation, plans and attempts) is also higher in ex-serving Veterans than in current serving and community samples, although less research is available. Internationally, the majority of completed in-service suicides occur in younger males in the lower ranks; risk factors that cross over to the transition period (R. D. Brooks, Toussaint, Corrigan, & Anke, 2019; US Department of Veterans Affairs and Department of Defense, 2019). There is also evidence that sub-syndromal mental disorder symptoms may increase risk for suicidal ideation, with suicidal ideation serving as an indicator of distress and impairment (Barr, Kintzle, Sullivan, & Castro, 2018; L. A. Brown, Chen, Narine, Contractor, & Oslin, 2020; Horwitz, Miron, & Maieritsch, 2019; J.D. Richardson et al., 2018). Additional international evidence for suicidality risk factors include gender and sexual orientation (Millner et al., 2018), negative social determinants of health (Blosnich et al., 2020), schizophrenia or bipolar disorder (P. D. Harvey et al., 2018), opioids or cannabis use (Anestis et al., 2019), prior suicidality (D. J. Lee et al., 2018), intimate partner violence (Brignone, Sorrentino, Roberts, & Dichter, 2018), death of someone close by suicide (Bryan, Cerele, & Bryan, 2017), military sexual harassment (Griffith, 2019) and military hazing (Kim, Kim, & Park, 2019). Factors identified as protective against suicidality in international military cohorts include resilience (defined as perceived resilience, distress tolerance and effortful control), connectedness to family, positive temperament, problem solving skills determination, spirituality, financial and housing stability, having pets and hobbies (Blow, Farero, Ganoczy, Walters, & Valenstein, 2019; Kachadourian, Tsai, Harpaz-Rotem, Southwick, & Pietrzak, 2019; Kelley et al., 2019; Simons et al., 2020).

3.3.3 Impact of posttraumatic mental health disorders

Together, evidence suggests that rates of mental disorder across all disorder classes tend to be elevated among military populations, and increase significantly following transition from active military service. This period of transition is a critical one in terms of identifying those at risk and linking them in with appropriate services and interventions. High rates of disorder, not just concurrent to service but across the lifetime, reflect the complex etiology of mental disorder emergence, progression and maintenance. The general pattern of increasing symptoms, disorder and distress across the life course, and as Veterans leave service, highlight the need for a system of care that has a life course approach, with touchpoints for screening, assessment and intervention at critical periods, and one that is responsive to changes in level of need and access.

As well as physical health problems and psychiatric comorbidity, mental disorders are routinely associated with high levels of social and occupational functional impairment (Australian Centre for Posttraumatic Mental Health, 2013; Bruffaerts et al., 2012; Paula P. Schnurr et al., 2009). In terms of social functioning, the core symptoms of, for example, PTSD and related conditions (such as social withdrawal, hypervigilance and startle responses, anger, and substance abuse) create multiple problems for close personal relationships. PTSD in Veterans is often associated with social isolation and volatile relationships, sometimes escalating into verbal and even physical abuse of partners and children. Elevated levels of anxiety disorders including panic attacks, agoraphobia and social phobia have also been identified as particularly prevalent among those transitioning from full time service.

Furthermore, the emergence and persistence of problematic levels of anger and aggression, both alone and in combination with PTSD, across the course of service and through transition have been well documented internationally. Together these findings reinforce the need for these issues to be a focus for Veterans' mental health services in order to improve outcomes for both the Veteran and their family.

Similarly, occupational functional impairment is common in Veterans with mental health problems. There may be multiple causes to this impairment beyond the psychiatric morbidity. For example, the Veteran may be struggling with physical problems through injury or other chronic health conditions. There may also be a skills deficit or mismatch – a Veteran who has served only as a soldier may find it difficult to gain employment in the civilian sector. Again, difficulty finding employment will place both financial and psychological pressures on both the Veteran and their family. While toxic workplaces are clearly bad for mental health (S. B. Harvey et al., 2017), there is generally considered to be a positive association between meaningful work and improved mental health (Modini et al., 2016).

3.4 The needs of families who support Veterans with posttraumatic mental health

As touched on above, understanding the posttraumatic mental health needs of Veterans necessitates an understanding of their relationship and broader family context. For families, of course, the impact of their loved one's mental health condition can be considerable. Relationships with partners often become strained and fractured, and the Veteran's mental health condition can contribute to substantial difficulties for children, particularly at vulnerable developmental stages.

Families can serve as a significant source of instrumental, social and emotional support for Veterans, and their role will vary according to their life stage. Family members may facilitate treatment seeking and access to care, they may take on the role of primary carer for those who are ill and injured, and they serve as a source of shared experience.

3.4.1 Defining family

This Conceptual Framework uses a Veteran centered definition of family to capture the multiple ways in which 'family' influences posttraumatic mental health needs. While 'family of choice' (peers, friends, etc.) is included in the definition, the diverse international landscape regarding how family is defined in Veteran health care is acknowledged, as well as the implications this has for policy setting and funding models.

The intent in this document is to situate the Veteran in the context of those people around them who influence and are influenced by their needs and access to care, rather than to provide any specific recommendations on what constitutes 'family' for the purpose of policy and funding models. Therefore, this framework utilises a broad definition of family:

Parents, siblings, partners/spouses, dependent and adult children, as well as carers (related or not), friends and peers (Dunt et al., 2019).

3.4.2 The impacts of military service on the family

The way in which the Veteran and their military service may impact family members is complex and multifaceted. The mental health and wellbeing of family members and the family unit may be impacted by a range of military factors. These factors generally impact mental health indirectly. For example, a number of studies have found that deployment, posting cycles and access to military specific supports can influence employment and financial status, access to services, family structure, function, and routines, as well as academic and social network interruptions. These in turn are associated with poorer general psychological wellbeing in spouse/partners and children, health behaviours including poor diet and exercise and problematic drinking, symptoms of anxiety, depression and psychological distress, elevated anger in spouse/partners, and emotional and behavioural problems in dependent school age children (Cramm, Mahar, MacLean, & Birtwhistle, 2019; Cramm, Norris, et al., 2019).

Deployment specifically has been linked to a higher prevalence of behaviour problems among dependent children in military families, however the majority of children and young people are not negatively affected (Lester et al., 2010; McGuire et al., 2012). Most studies do not include specific measures of mental health among dependent age children. However, a review of the impact of parental military service on child wellbeing outcomes found that while there is still relatively limited research in this area, when compared to civilian counterparts there was evidence that a range of military-specific factors impacted on the health and wellbeing of children, including emotional and behavioural difficulties and elevated depression symptoms (Blamey, Phillips, Hess, & Fear, 2019).

The impact of military service, including traumatic deployment exposures, on the mental health and psychosocial functioning of Veterans themselves also has the potential to indirectly affect their family members. There is evidence of elevated mental health problems among immediate family members of Veterans with disorders such as PTSD. A meta-analysis of the effect of Veterans' combat exposure and PTSD on family and child outcomes found moderate associations between parental posttraumatic stress symptoms/PTSD and family difficulties, parenting problems, poor family functioning and child problems (Kritikos, Comer, He, Curren, & Tompson, 2019). There were also associations between combat exposure and family difficulties and parenting problems, although those these were smaller. Giff et al. (2019) also found that deployment related PTSD was associated with parenting in both Veterans and their partners.

> The role of family in supporting Veterans' mental health is critically important, so engaging them within systems of care and decision-making is also crucial.

The symptoms of Veterans have been found to impact on the couple dynamic and parenting behaviours in both parents, and subsequently on the family unit as a whole. Farero et al. (2019) found distinctions in how depression and PTSD among male Veterans were associated with adverse behavioural outcomes in their dependent children. Specifically, depression was associated with concurrent behavioural problems, while PTSD was associated with longer-term difficulties at 2 years post-deployment. Depression impacts may occur through disengaged, emotionally distant parenting occurring as the depressed Veteran withdraws. While in relation to PTSD, as these symptoms can have a delayed emergence following deployment, and a worsening with the passage of time, they may only begin to impact the family later on.

In light of the evidence of emerging symptomatic distress among Veterans in the years following combat exposure, these findings relevant in terms of early intervention and risk mitigation. They suggest the need for targeting the family unit, as well as specific problems following deployment and combat exposure. Importantly, they strongly indicate the need for family services for Veterans with PTSD symptoms. Implications include adapting service systems to address the issue of family reintegration and parenting, and highlighting the importance of long-term engagement with Veterans and families as difficulties may not emerge until later on. Mental health problems exert impacts at multiple levels and in multiple ways. While symptomatic improvements may be a desired outcome, this will not necessarily flow down to wellbeing and functioning at the family level without dedicated targeting of this.

Any consideration of the posttraumatic mental health needs of Veterans and their families requires an approach that includes the family unit as well as individuals within this unit. This is important evidence for why families need to be integrated into any consideration of Veteran health care and service systems.

3.4.2.1 FAMILY DYSFUNCTION & VIOLENCE

TThe issue of family dysfunction and violence in the context of military service is important to consider. As discussed above, elevated rates of violence and dysfunction in the families of those with PTSD and depression have been well documented. In addition to the impacts of the mental health of Veterans on their intimate and family relationships, military contextual factors are also important to consider.

A recent systematic review of intimate partner violence in the US military identified a high prevalence among both genders, with emotional/psychological abuse most common (Sparrow et al., 2020). A range of military factors demonstrated inconsistent associations with risk, including service, rank, and transition status. For example, one study found higher prevalence rates among those in the Army compared to those in other branches, though several other studies found no such relationship. Half of the studies which examined intimate partner violence and rank reported elevated rates among lower ranks relative to higher ranks. Finally, victimisation rates were much more varied in current serving personnel than Veterans, with estimates including much higher upper ranges. There is also mixed evidence regarding divorce among military populations, with some studies finding increased rates compared to community samples (Pethrus et al., 2019) and other research indicating comparable rates (Karney, Loughran, & Pollard, 2012). Nevertheless, divorce and family separation is associated with high levels of distress, as well as disorders including depression and anxiety (Wang et al., 2015).

Military stressors including posting cycles, loss of support networks, financial, employment and housing strain have all been found to be associated with increased family dysfunction, intimate partner violence and child maltreatment (Ridings, Moreland, & Petty, 2019).

3.4.3 The needs of the family

Despite the obvious importance of this area to Veterans' mental health and wellbeing, surprisingly little is known about the nature and prevalence of mental health and wellbeing needs of Veterans' families.

A particular challenge in improving the mental health and wellbeing of partners and children lies in teasing out what aspects of their problems and needs are attributable to the Veteran's experiences and/or behaviour and what aspects have arisen independent of military connections.

It is an impossible question to truly answer as individual vulnerabilities interact with personal circumstances in determining mental health status. While this might become an issue in some jurisdictions (some services, for example, are only allowed to provide treatment to family members if the actual goal is to improve outcomes for the Veteran), from a clinical perspective it is not necessarily an issue. In treating any person, all factors should be taken into consideration when formulating the case and developing a treatment plan.

3.4.3.1 STRUCTURAL FACTORS IN CONSIDERING THE NEEDS OF FAMILIES

In general, when considering the needs of families, there are a number of systems and structural issues that should be first considered.

In addition to the Veteran and their family members, the structure of their household, financial and occupational status, and care responsibilities can all increase risk for family dysfunction at all levels (Ridings et al., 2019). Cramm et al. (2019b) also highlight the importance of family structure, roles and routines, in terms of reciprocal impacts on the mental health of Veterans and their family members. Likewise there are a range of protective factors including stable housing, secure employment, financial stability, social support, feelings of control over one's situation as well as general factors around exercise, healthy eating and sleep that are important to consider.

When thinking about the family system, other family members such as parents of Veterans also need to be considered, particularly in how they may support or contribute to mental health and wellbeing. For example, Farero et al. (2019a) found that the strength of parent-soldier relationships was associated with improved mental health outcomes post-deployment in US National Guard soldiers. There is also some evidence that Veteran's concerns about their family may also have impacts on their mental health and wellbeing (Sanders, Smith, Fox, & Vogt, 2019).

3.4.3.2 NATURE AND PREVALENCE OF MENTAL HEALTH CONCERNS (FAMILIES)

While there has been relatively limited research into the mental health of Veteran families, a number of studies have provided estimates of mental health, behavioural health and wellbeing, and emotional and behavioural problems among spouse/partners, dependent children and adult children of Veterans. Further, rather than general prevalence estimates, most studies consider the mental health of family members in relation to a range of risk and protective indicators including military factors such as posting cycles, deployment and military trauma, and transition from military service, family factors including family roles, structure and function, and the mental health of Veterans themselves.

Studies examining the prevalence of mental and behavioural health and wellbeing problems among spouse/partners of Veterans have shown some evidence of elevated rates of anxiety, depression and psychological distress, symptoms such as anger, and risky health behaviours including problematic alcohol consumption, poor physical fitness and sleep problems (Kulak, Fillo, Homish, Kahn, & Homish, 2019). Kulak et al. (2019) found military spouses/partners showed behavioural health problems, regardless of the deployment history of their partners. This included problematic drinking. Anger was also found to be higher than in the general population, and the majority had symptoms of anxiety and around a third had depressive symptoms. There were also significant associations between alcohol use and other mental health problems among spouses/partners.

In the Australian context, most research into the mental health and wellbeing of families has focused on deployed Veteran populations, and findings have been mixed. This is most likely due to methodological differences in study design, including time frames (contemporaneous or retrospective) and whether Veterans were current or ex-serving.

The Timor Leste Family Study (TLFS) found no evidence of elevated mental health problems among spouses/partners of deployed Veterans (**McGuire et al., 2012**), while the Vietnam Veterans Family Study (VVFS) found that rates of anxiety disorders and severe recurrent depression were higher among spouses/partners of ex-serving members than in the general Australian community (**O'Toole, Outram, Catts, & Pierse, 2010**).

More recently, the Transition and Wellbeing Research Programme Family Wellbeing Study (FWS) found that spouse/partners had similar mental health to the general population, however there were elevated parent reports of emotional and behavioural problems among dependent children. These findings are consistent with international research showing elevated emotional and behavioural problems among dependent school aged children of Veterans (**Daraganova, 2019**).

There has been less research on the adult children of Veterans, but the VVFS found elevated rates of anxiety, depression and suicidality including ideation and attempts among adult children of deployed Vietnam Veterans compared to other adult children from the same era, suggesting that military service may also have more long-term intergenerational impacts on family members. The possibility of intergenerational effects of trauma is well accepted, and one that should be considered when addressing the current and future needs of Veteran families, particularly against the background of known traumatic exposures that will occur in the course of military service.

As with the needs of Veterans specifically, the needs of families should also be considered from a life course perspective, with varying needs at different stages. A rapid evidence review regarding support service delivery to families of Veterans found that there is no single approach that meets the needs of all families (**Lawn, Oster, & Waddell, 2017**). There is a requirement for diverse and responsive frameworks to access supports and services. Psychosocial needs of families have been neglected, but are critically important in supporting the Veteran and the family network that surrounds them.

3.4.3.3 FAMILIES AS A SOURCE OF CARE AND SUPPORT

When considering the mental health needs of Veteran families, the issue of caregiving is particularly relevant.

Family members often fulfil the role of primary carer for Veterans with mental health problems. Importantly, caring for Veterans, particularly with significant health issues and comorbidities including PTSD, can place a high degree of burden on families (Brickell et al., 2019a). Perceived burden carries with it effects on the mental and physical health and wellbeing of family members, so is important to address. While caring itself carries significant burden in the form of time commitments and general caring activities, Brickell et al. (2019a) found that the effect of caregiving on employment and finances, time for self-care, and parenting all increased perceived burden.

These factors highlight the need to address burden outside of the disorder specific needs of the Veteran. Family members are also a primary conduit to care for Veterans. A number of studies have shown that family member needs and concerns can drive Veteran help seeking, and family members often facilitate actual access to health care (Forbes et al., 2018).

All of this highlights the importance of considering the mental health needs of Veterans within the context of the needs of their family unit. Despite the evidence of the importance of family systems in the overall mental health needs of Veterans, the needs of families are not well defined or often addressed in health care systems. The cumulative toll of unmet needs may have deleterious consequences to family members and also to Veterans, with poorer health outcomes for family members and negative impacts on their ability to support the Veteran family member (Brickell et al., 2019a).

The role of family in supporting Veterans' mental health is critically important, so engaging them within systems of care and decision making about care is also crucial. Services and support to better equip families will have beneficial flow on effects to Veterans.

3.5 Summary

Mental health disorder is highly prevalent amongst Veterans, affecting up to 25% of their number. The aetiology of mental health problems in Veterans is multifactorial and the nature of mental health problems is complex, with comorbidity the norm. A system of care for Veteran mental health needs to take a broad wellbeing approach, with a focus on prevention and early intervention as well as treatment. It should also encompass a longitudinal perspective, mindful of the life-cycle of the Veteran, with transition from the military recognised as a particular time of vulnerability for the emergence of mental health concerns. Family wellbeing is central to Veteran wellbeing, so the system of care needs to respond to the Veteran in the context of their family, whatever the family make-up may be for the individual at a particular point in time, and address the needs of the family, not just the Veteran.

In the context of identified mental health needs of Veterans and their families, the next section examines the current system of services and supports, and presents a vision for the future optimisation of Veteran mental health services.

4 The current system and a vision for the future

This section identifies how the needs identified in the previous section are typically being addressed through the current system of services and supports. It then explores a case for change and outlines a vision for a high performing posttraumatic mental health system. One for all of us to aspire to.

Key points from this section

Difficult to navigate system of services
Much like many western health and wellbeing systems, Veterans and their families face a complex adaptive system of services and supports to address posttraumatic mental health needs, one that is often difficult to navigate with a range of players performing a number of roles.

Existing systems do not meet needs
Internationally, there is consensus that existing systems of care for Veterans do not adequately meet their needs across all areas. There is no doubt that patches of good services and supports for Veterans and their families already exist in many countries, but typical challenges faced by Veterans and their families remain and include:

- Attitudes regarding self-reliance and the preference for self-management in addressing their specific needs.
- Perceived stigma around mental health issues driving a reluctance to seek treatment.
- Access barriers, including administrative, geographical, economic, hours of work, childcare, culture, ethnicity and identity.
- Inadequate treatment planning encompassing modest responses to interventions, properly defining and understanding factors associated with "treatment response" and the timing of treatment.
- Lack of capacity within service providers driven by problems such as staff shortages, staff turnover, long waiting lists, case load pressures and poor physical infrastructure.
- Ineffective treatment including poor engagement of Veterans and their families, inappropriate modes of delivery, poor treatment fidelity, retention issues and dealing with comorbidity, chronicity and other complexities.
- Fragmentation and poorly coordinated care between services and providers.
- Gaps in evidence in terms of effective treatments.
- Families and peers not visible or leveraged.

Heavy costs of Veterans' posttraumatic mental health problems
The heavy social, health and economic burden created by posttraumatic mental health problems in the Veteran community lead to a strong case for systemic change designed to address the challenges outlined and improve outcomes for Veterans and their families.

Effective treatment = long-term savings

A consistent body of evidence points to the cost effectiveness of evidence-based treatment for PTSD and related conditions. The evidence suggests that an efficient and effective Veterans' posttraumatic mental health system has the potential to reduce domestic violence, family breakdown, suicide rates, unemployment, homelessness, and disability adjusted life years (healthy years lost), as well as making longer term savings in health and psychosocial care costs.

Opportunities for key changes

There are clearly opportunities for key systemic changes designed to improve outcomes. We propose that a future system design be built on the following seven principles:

1. Respect and dignity
2. Engagement and involvement
3. Equity of access
4. Breadth of support
5. High quality treatment and care
6. Holistic outcomes
7. Economic responsibility.

The system design highlights key features across these principles including posttraumatic mental health literacy, the role of peers and lived experience advocates, a stepped / matched model of care encompassing tiers of service, digital supports and pathways to broader systems of care and support, the role of intake, assessment, service navigation and care coordination, networks of treatment excellence receptive to data collection, quality assurance and continuous improvement, the role of big data and advanced analytics and funding and incentivisation models.

Active involvement of key stakeholders is crucial

A broad range of stakeholders are able to influence the design of the system, the way in which it operates and the outcomes achieved for Veterans and their families. The active involvement of all of these stakeholder groups in developing and operating a revised posttraumatic mental health system will be crucial – no single organisation can deliver this new, integrated system design alone.

Focus on best and next practice interventions and treatment

This Conceptual Framework does not focus on building out all components of this future system design, rather one of the most fundamental components – best and next practice interventions and treatment.

4.1 Challenges within current systems of treatment and support

Building on the discussion of the posttraumatic mental health needs of Veterans and the broader needs of families who support Veterans, it is important to consider how well typical systems of services and supports meet those needs.

This is not intended as a specific analysis of any one current system, nor a reflection or criticism of current approaches and policies of different countries. There is no doubt that patches of good services and supports for Veterans and their families already exist in many countries, including Canada and Australia. Due to the nature of this Framework, the focus here is to outline typical challenges faced by Veterans and their families as they seek help and viewed through their eyes.

Much like many western health and wellbeing systems, Veterans and their families face a complex adaptive system of services and supports to address posttraumatic mental health needs, one that is often difficult to navigate with a range of players performing a number of roles.

Internationally, there is consensus that existing systems of care for Veterans do not adequately meet their needs across all areas. The increasing focus on holistic health and wellbeing in the context of a whole-of-life approach, and acknowledgement of the critical role of families, means there is significant scope for improvement in a range of areas. Typical challenges faced by Veterans and their families include:

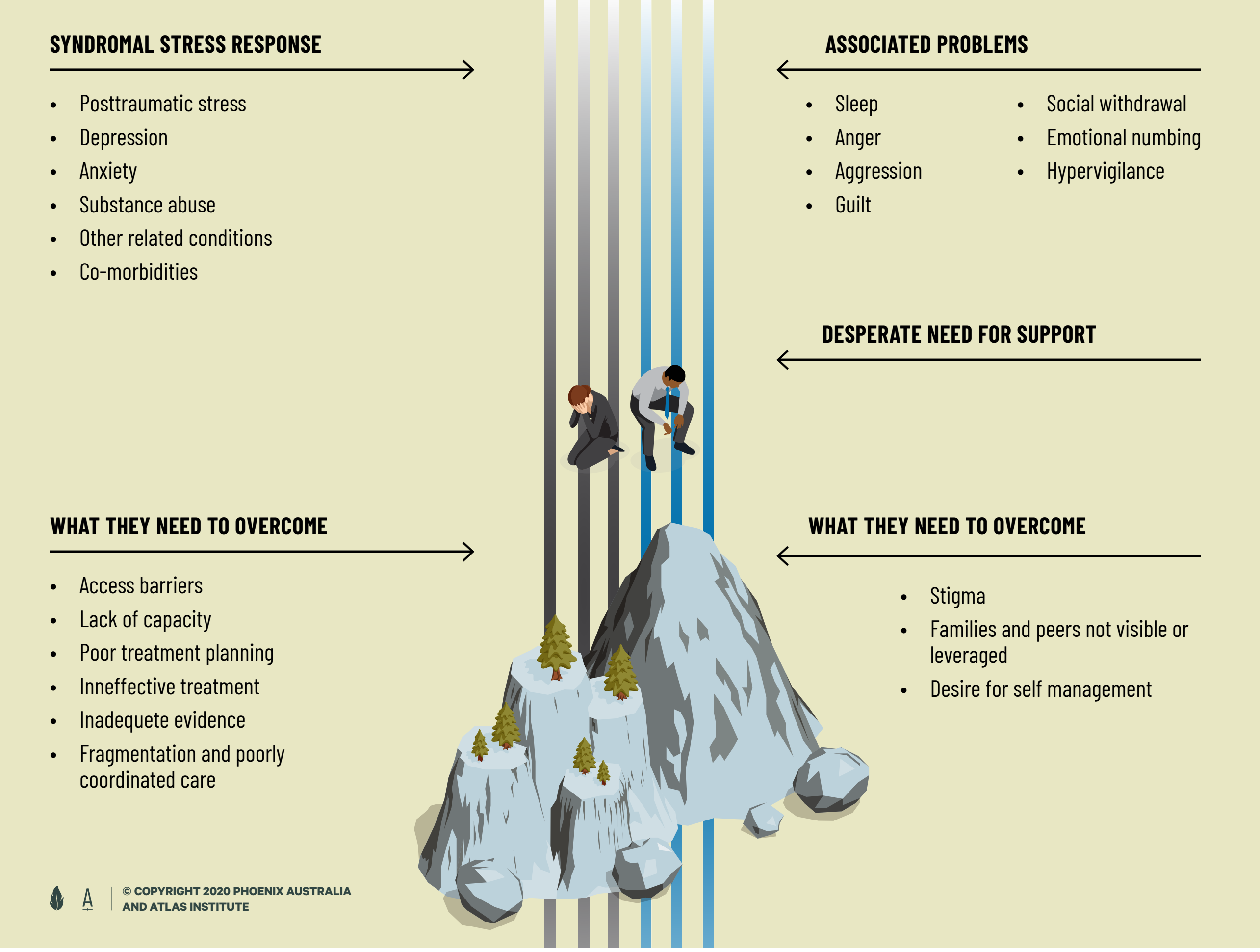


Figure 4: Typical challenges faced by Veterans and their families in existing systems of care

4.1.1 Attitudes regarding self-reliance and self-management

Veteran attitudes regarding self-reliance and the accompanying desire for self-management is evident in military populations. Some Veterans may also be reluctant to seek formal mental health care. In this context, while the use of EBPs is a core component of best practice, there also needs to be some flexibility in the application of this in Veteran populations. While some interventions may have poor or limited evidence (e.g., animal support programs, Veteran retreats), or be inferior to other first-line treatments, they can still be useful in engaging Veterans in care. Furthermore, non-professional sources of support have also been highlighted as an important means of engaging with those who may be otherwise reluctant to seek formal mental health care (Currier, McCormick, Carroll, Sims, & Isaak, 2018).

Recent research has highlighted the utility of mobile applications (apps) and other technologies in the context of self-management specifically. They can be used to support positive behaviours known to promote good mental health, such as physical activity, diet and sleep, and importantly can also be used for social connection.

This approach is useful for self-management, but also equally important in the shared management of care with a professional. Data from apps and wearable technologies could be used to discuss progress in treatment, responses to medication or evidence-based care, such as Cognitive Behavioural Therapy (CBT), and when in recovery, used to potentially identify early warning signs of relapse such as sleep disturbance, lack of social engagement or a reduction in physical activity.

A consideration for service design, therefore, will be how to support and guide the implementation of apps and the use of technology within service systems. In the US, this challenge has been addressed by the development of Mobile Health Practice Guidelines and an app store accessible via the Veterans Affairs Department, highlighting Defence and Veteran specific apps (Armstrong et al., 2017).

4.1.2 Stigma

Perceived stigma around mental health issues has long been recognised as a reason why people may be reluctant to seek treatment.

A distinction is sometimes made between public stigma, where the culture in which the person operates effectively “punishes” the behaviour (e.g., individuals are disadvantaged if they acknowledge mental health problems), and self-stigma, where the person’s own values and beliefs are contravened by the experience of mental health problems (e.g., having a mental health problem means that I’m weak). Military and Veteran populations are particularly vulnerable to both: even if the military culture changes to be more accepting of mental health problems, the person may continue to internalise views of a warrior ethos – of being strong, unbreakable, and “not letting down your buddies/mates”. These negative appraisals may serve to discourage individuals from seeking timely help for mental health problems.

Stigma in military and Veteran personnel may take several forms, particularly fear of loss of respect from peers and superiors. In a UK survey asking about attitudes to seeking mental health care, for example, 44% of serving members endorsed “My unit leadership might treat me differently” and 43% endorsed “I would be seen as weak” (Sharp et al., 2015). Many Veterans and serving personnel express a fear of implications for their career and financial situation, worried that they will be discriminated against if other people know they have mental health issues (Coleman, Stevelink, Greenberg, Hatch, & Denny, 2017; Forbes et al., 2018; National Institute for Clinical Excellence, 2018; Van Hooff, Hodson, Lorimer, & McFarlane, 2012).

The research also suggests that stigma is more likely to be a problem for officers than other ranks, perhaps because they place greater pressure on themselves to be strong leaders (**Van Hooff et al., 2012**). There is also, perhaps not surprisingly, higher concern about stigma in those with a mental health problem compared to those without (**Van Hooff et al., 2012**). While many of those stigma issues may present particular concerns for serving members, they are clearly also issues of concern for Veterans.

On a more positive note, there is some suggestion that stigma may not actually be as big a barrier to seeking help as it appears at first sight, at least in military populations. Although studies routinely highlight stigma as a concern raised by serving personnel, this may not prevent help seeking (**Rafferty, Stevelink, Greenberg, & Wessely, 2017**; **Sharp et al., 2015**). A recent systematic review investigating the link between stigma and help-seeking reported that 9 studies found no association between anticipated stigma and help-seeking intentions or mental health service use, and 4 studies actually found a positive association. Counterintuitively, those that endorsed high anticipated stigma still utilised mental health services or were interested in seeking help (**Sharp et al., 2015**).

On a related theme, personal beliefs about mental health treatment – whether, for example, treatment would be of any value – also act as a barrier to seeking care, with many Veterans believing that they would be better off managing their own mental health issues without professional interference (**Bovin et al., 2018**; **Coleman et al., 2017**; **Rafferty et al., 2017**). There is some lack of trust towards military health services, particularly around confidentiality (**Fikretoglu, Guay, Pedlar, & Brunet, 2008**), although on a more encouraging note, Veteran-specific services generally receive the highest satisfaction ratings from Veterans (**Forbes et al., 2018**).

Despite some conflicting findings regarding stigma as a barrier to help seeking, it remains an important target for intervention, along with education about the benefits of evidence-based treatment for posttraumatic mental health problems. Indeed, most military and Veteran services deliver a variety of psychoeducational interventions that aim to reduce mental health-related stigma and to encourage personnel to seek help when they need it. Examples include Battlemind in the US (**Adler, Bliese, McGurk, Hoge, & Castro, 2011**) and Trauma Risk Management in the UK (**Greenberg, Langston, Iversen, & Wessely, 2011**). There is some evidence that such programs can be effective. For example, UK research found substantial reductions in reported stigma between 2008 and 2011, suggesting anti-stigma campaigns may have had positive effects (**Osorio, Jones, Fertout, & Greenberg, 2013**). As part of that process, a core strategic priority should be to target the Veteran community with psychoeducation about mental health problems and their associated impact on family, social and occupational functioning, physical health and quality of life. Such psychoeducation should also cover what to expect in treatment, the benefits of professional help and how to access the available services.

> Despite some conflicting findings regarding stigma as a barrier to help seeking, it remains an important target for interventions, along with education about treatement.

4.1.3 Access barriers

Assuming the initial barriers to engaging Veterans and their families in treatment can be addressed – that is, helping them to acknowledge that they may have a problem and to make a decision to seek care – the next potential barrier is that of access and acceptability.

4.1.3.1 ADMINISTRATIVE

It can be often difficult for Veterans and their families to negotiate through the complexities of the mental health service system (National Academies of Sciences Engineering and Medicine, 2018; Rafferty et al., 2017). There may be a lack of awareness about eligibility, particularly from family members, with confusion about how to access care. In some countries, there are complex and frustrating application processes that are beyond the capacity of many people with mental health concerns. Thus, strategies should be in place to minimise the administrative burden on Veterans seeking care.

4.1.3.2 GEOGRAPHICAL

There may be accessibility issues relating to the availability of services in the Veteran's local area. At worst, especially in rural and remote areas, there may simply be no suitable services available. Even when services are geographically available, other accessibility issues such as transport challenges may confront the Veteran and their family (National Academies of Sciences Engineering and Medicine, 2018; Rafferty et al., 2017). It goes without saying that ensuring access to services regardless of geographic location is a high priority requiring not only appropriate transport arrangements but also, when required, alternative approaches such a telehealth, internet based treatments and telephone counselling.

4.1.3.3 ECONOMIC

Despite the fact that, in many countries, mental health services for Veterans are fully funded, socioeconomic status and poverty can remain a barrier to accessing treatment. If people are struggling to meet the basic necessities of life such as food and housing, their mental health needs inevitably take a low priority. The Veteran and their family may not be able to arrange or afford transport to their appointments, even if the costs are later reimbursed. If they are working, especially in low paid and precarious employment, it may not be possible to arrange time off to attend treatment. They may not be able to afford medications that are central to their treatment plan. In short, poverty and limited resources may mean that accessing mental health care is simply too difficult and such economic barriers need to be addressed proactively.

4.1.3.4 PRACTICAL BARRIERS

The practicalities of accessing mental health services combined with the demands of parenting and hours of work, is a potential barrier particularly relevant to younger Veterans (Lehavot, Der-Martirosian, Simpson, Sadler, & Washington, 2013; Marmar, 2009; Yano et al., 2010). Younger Veterans by virtue of their age are more likely to have young families and potential childcare commitments, and those who have transitioned from regular service are likely to be employed in a civilian occupation, possibly making it difficult to access services within usual work hours. More broadly, Veterans may also have other practical commitments, including elder care, that impede their ability and flexibility in accessing services. Thus, flexibility in service delivery modalities (i.e., telehealth), and increasing access beyond the standard 9 to 5 is an important step to ensure equitable access to services.

4.1.3.5 CULTURE, ETHNICITY, IDENTITY

Minority groups across ethnicity, race, culture and identity may struggle to engage with existing Veteran mental health services (Hogan & Seifert, 2010). By virtue of their minority status, appropriate cultural competencies, language and understanding of their specific needs (as touched upon earlier in this section) may not be explicitly embedded in many services. For example, improving mental wellness outcomes for Veterans and their families from Indigenous Peoples needs to prioritise factors beyond formal mental health treatment, such as culture, language, the role of Elders and family, and creation beliefs in mental wellness. Similarly, an individual of a specific religious denomination may wish to consult with a provider who shares and understands their beliefs. Eliason et al. (2019) propose the need for person-centred care that prioritises patient values, needs and goals to address racial and ethnic disparities in the quality of and access to healthcare for Veterans of racial and ethnic minorities (Eliacin et al., 2019). This model of care acknowledges the vast differences in individual Veteran's circumstances and experiences, rather than using a one size fits all approach. A number of recent reviews have also examined barriers to care among gender and sexual orientation minorities, highlighting the need for cultural competency, understanding and sensitivity within services to facilitate accessibility and acceptability. For example, in the case of Veterans with LGBT identities, their LGBT identity (including historical social and institutional stigmas) intersects with historical anti-LGBT policies within military culture specifically, reinforcing and compounding barriers to care for this group (Valentine, Shipherd, Smith, & Kauth, 2019). These historical stigmas and policies can pervade existing service cultures, creating a perception of an unwelcome and hostile environment, and leading to reduced access by sexual and gender minorities. Without explicit training and awareness in LGBT needs and experience, and understanding of military culture, services may be implicitly discriminatory.

Taken together, there is still a dearth of evidence regarding how best to address issues of culture, ethnicity and identity within mental health services, particularly those with a Veteran-centric focus. Thus, in addition to these various elements of each Veteran's identity being considered in any holistic treatment service and system design, there also needs to be a focus on better understanding and building knowledge about how these issues present specifically within Veteran populations.

4.1.4 Inadequate treatment planning

Despite substantial gains in the understanding of effective treatments over the last two decades, there is much that remains unknown. The following are just a few of the challenges that confront clinicians in case planning.

4.1.4.1 MODEST RESPONSES TO INTERVENTION

It must be acknowledged that treatment outcomes for PTSD and related conditions in Veterans are modest relative to outcomes seen in the general community. Recent reviews suggest that, while 50-70% of Veterans with PTSD who receive evidence-based trauma-focused psychological treatment report significant symptom improvement, mean post-treatment scores remain at or above clinical cut-offs and approximately two-thirds of Veterans still meet criteria for PTSD after treatment (Haagen, Smid, Knipscheer, & Kleber, 2015; Steenkamp, Litz, Hoge, & Marmar, 2015).

The evidence is clear that pharmacological interventions (while clearly an important component of treatment) are less effective than psychological interventions, especially over the longer term (Lee et al., 2016; Merz, Schwarzer, & Gerger, 2019). These somewhat disappointing findings raise several important questions; How is it decided what constitutes a good response to treatment? Why do some Veterans respond better than others? How should clinicians respond to treatment non-response? What can be done to improve treatment effectiveness? Our capacity to answer these questions is limited at this stage and all are legitimate foci for future research. The following represent a brief look at some of the issues raised by these questions.

4.1.4.2 DEFINING "TREATMENT RESPONSE"

Little consensus exists regarding what constitutes an appropriate treatment response and effective recovery. Most treatment outcome studies focus almost exclusively on symptom reduction, using arbitrary criteria such as percentage change from pre- to post-treatment (e.g., a 30% reduction in symptom severity), absolute improvement (e.g., 10 point reduction on the CAPS), good end-state functioning (e.g., scoring below a specified symptom cut-off), and loss of diagnosis (Sippel, Holtzheimer, Friedman, & Schnurr, 2018). Few, if any, of these approaches have been either empirically validated or demonstrated to be of clinical significance. Indeed, a Veteran (or partner) may experience clinically significant improvement without achieving one of those arbitrary definitions or, conversely, may meet the definition but still not experience clinically significant benefits.

Contemporary recovery models take a broader, more holistic view. This position will be discussed further below, but essentially it argues that effective response to treatment must go beyond simple symptom reduction to include factors such as a stable and safe living environment, meaningful activities and strong social networks. Indeed, recovery models strongly emphasise the importance of social connectedness as a facilitator of good mental health and recovery. Whatever the desired end point of engagement with a Veterans' mental health service system, it clearly needs to go beyond simple symptom reduction to also include post-treatment functioning and quality of life. These broader elements of treatment response need to be reflected in the use of appropriate outcome measures. Recommendations regarding the optimum measures are beyond the scope of this document, although it is worth noting that several attempts have been made in recent years to generate a list of "common data elements (CDE)" to facilitate comparisons across research and clinical settings in Veteran mental health (Barnes et al., 2019). It will be important to draw on that work, in the context of an international collaboration, to agree on the most appropriate measures to adopt across the system.

4.1.4.3 FACTORS ASSOCIATED WITH TREATMENT RESPONSE

Better understanding of who is, and is not, likely to respond to treatment enables Veterans' mental health service systems to structure interventions to better address the needs of potentially "non-responsive" Veterans and partners. Although high quality research in this area is limited, preliminary evidence suggests that better PTSD treatment response may be associated with factors such as female gender, more psychological and social protective factors, and higher years of education, while worse response may be associated with ethnicity, comorbid personality disorder, greater pain severity and current application for disability-related compensation (Sripada et al., 2019). An investigation of predictors of treatment response amongst Canadian Veterans with PTSD found comorbid depression to be the most significant predictor (Richardson et al., 2014), while an Australian study found that Veterans with the triad of severe PTSD, depression and guilt had the worst treatment outcomes (Phelps et al., 2018a; Richardson, Elhai, & Sarreen, 2011a). Beyond that, it is clearly an important question for future research and one that can hopefully be integrated with routine clinical practice and data collection.

Considering the health and wellbeing of Veterans in the cycle transitioning from being a civilian to joining the military and then back to civilian life is critical in designing and targeting services. Evidence suggests that mental health morbidity among Veterans does not fully manifest in the course of their military service, as discussed above. There is a need for services and clinicians to understand the long-term trajectories of many of the symptoms, complaints and comorbidities that are observed in this population. There is also a need for communication across all elements of the service system.

4.1.4.4 TIMING

It is a generally accepted wisdom that the earlier a mental health problem can be detected and treated, the better the long term outcome. As other authors have noted (Australian Centre for Posttraumatic Mental Health, 2013), the data do not necessarily support this in terms of treatment effectiveness in PTSD. Only two studies to date have been designed explicitly to answer this question, both using only a 12-week waitlist delay, and both found no differences in outcome between those receiving early treatment and those in the delayed treatment group (Duffy, Gillespie, & Clark, 2007; Shalev et al., 2012). Similarly, a retrospective chart review found that the chronicity of PTSD was unrelated to treatment outcome (Richardson et al., 2014). Other large PTSD treatment outcome studies that have explored this question retrospectively (that is, duration of illness before seeking treatment) have generally reached the same conclusion (e.g., Gillespie, Duffy, Hackmann, & Clark, 2002; Resick, Nishith, Weaver, Astin, & Feuer, 2002). While this is counterintuitive, it may be that those who delay their treatment differ in some important ways from those who seek treatment earlier and perhaps these difference influence their suitability for treatment. This has particular significance for Veteran populations who, as noted in the previous section, may delay seeking treatment for some years. The more that is understood about why this group is unwilling to access treatment, the better chance there is of addressing the problem.

Importantly, early intervention does seem to be associated with better outcomes in depression (Australian Centre for Posttraumatic Mental Health, 2013; Ghio, Gotelli, Marcenaro, Amore, & Natta, 2014) and, as noted above, depression often exists comorbidly with PTSD in Veterans. The same is true for substance use disorders (Timko & Cucciare, 2020), which also show high prevalence rates in Veterans and may be used as a self-medication to manage aversive symptoms. From a clinical perspective, it is reasonable to assume that longer duration of illness will be associated with a range of other social and occupational problems, as well as significant distress. For that reason alone, it would be sensible to encourage Veterans with PTSD to access treatment as early as reasonably possible. Equally, it is important to emphasise to Veterans who experienced their trauma some time ago that treatment can be effective regardless of duration of illness.

One way to consider the timing of intervention is from a prevention perspective. Primary prevention aims to prevent disease or injury before it develops. Examples of this in military settings include psychological resilience programs and pre-deployment training, as well as mental health screening during and immediately following deployment with a view to providing acute preventive interventions as required. Although such a system has potential, it relies almost entirely on the serving member being honest in their response on screening tools. A review of the reliability and validity of mental health screening programs is beyond the scope of this document (Forbes et al., 2019), but suffice to say it is not a good mechanism to identify problems and offer early intervention. A US study on anonymous screening, for example, found screening revealed rates two to four times higher on the anonymous survey than on the routine screening. The study concluded that the screening process "misses most soldiers with significant mental health problems" (Warner et al., 2011). In the future, screening may involve the identification of certain biomarkers as risk markers for PTSD (McFarlane et al., 2017).

This problem of a reluctance to acknowledge problems also plagues attempts at secondary prevention. Secondary prevention aims to reduce the impact of a disease or injury that has already developed by detecting and treating it as soon as possible in order to facilitate a return to pre-illness health and function and prevent long-term problems. Again, delays in Veterans acknowledging mental health problems to others (and, in many cases, even to themselves) makes this level of early intervention also difficult. This leaves Veterans' mental health service systems to deal primarily at a tertiary prevention level – to treat what have often become chronic conditions with the goal of not only reducing symptoms but also addressing a complex array of other psychosocial and physical problems that have emerged as a result.

This brief discussion regarding the challenge of providing interventions as early as possible in order to minimise recruitment of symptoms and functional impairment highlights the need for mental health service systems to address these barriers to care. It will inevitably require a multi-component approach including, perhaps, psychoeducation programs, assertive outreach, peer programs, and support for families (who are often, in the end, the reason that Veterans eventually agree to engage in treatment). These issues will receive further attention in the following section.

4.1.5 Lack of capacity

The mental health services themselves may suffer from problems such as staff shortages and high staff turnover, long waiting lists, premature termination by providers (despite ongoing symptoms) because of case load pressures, and poor physical infrastructure such as lack of parking, being far from public transport, and having inadequate facilities, that make the service inaccessible and unacceptable to Veterans and families. In some countries, long wait times may serve as a deterrent to seeking services from Veteran specific providers, as well as more broadly. For example, average wait times for a Veteran seeking care for PTSD through Disability Benefits is approximately 42 weeks for their first application (Veterans Affairs Canada, 2020).

In addition, the Veteran community presents multiple challenges to treatment services – there is often a high level of complexity and, as noted above, treatment response is often modest. As a result, some health service systems (particularly those that are not Veteran-specific) may show a lack of commitment to the mental health of Veterans and a reluctance to meet the challenges they present to clinicians.

4.1.6 Ineffective treatment

4.1.6.1 ENGAGEMENT

There are several options that Veterans' mental health service systems might incorporate with a view to enhancing treatment effectiveness at systemic, facility and individual clinician levels.

Perhaps the first challenge is that of improving engagement – there can be difficulties in engaging Veterans in treatment, particularly early in the course of their illness. This may partly reflect that services and supports are often not designed to suit their specific needs. Approximately half of US Veterans who need mental health care do not use mental health services (VA or non-VA) (National Academies of Sciences Engineering and Medicine, 2018). Many more do not engage in evidence-based treatment (EBT), with only 3-4% of all Veterans with PTSD receiving EBT (Sayer et al., 2017). Less than 10% of CAF members who met criteria for a past-year psychiatric disorder sought treatment from a mental health provider and the majority of those reported five or fewer visits in the past year (Fikretoglu, Elhai, Liu, Richardson, & Pedlar, 2009). Around 60% of UK serving personnel with a mental health diagnosis do not seek professional treatment, with most not acknowledging a need for services (Fikretoglu et al., 2008; Sharp et al., 2015; Stevelink et al., 2019).

The picture is slightly more optimistic in Australia, where 84% of recently transitioned ADF members with a mental health diagnosis have sought care, mostly with a mental health professional. Although good by international standards and in comparison with civilians, only about 25% of those with current mental health problems received evidence-based care in the last 12 months (Forbes et al., 2018). While there are encouraging signs that Veterans are accessing treatment earlier than they were a decade ago (Boulos & Zamorski, 2016; Forbes et al., 2018; Murphy & Busuttil, 2018), engagement of Veterans (and partners) in treatment remains a significant challenge for all Veterans' mental health services. The process of engaging in treatment comprises multiple steps: acknowledging the problem, deciding to seek treatment, accessing care and retention in treatment, with different solutions required for each. In the Australian context there is evidence that while rates of initial engagement and uptake of services for mental health are reasonably high among Veterans, there is under-engagement with evidence-based treatments (Forbes et al., 2018). This is due to an accumulation of factors that occur at each phase of the help seeking process in relation to engagement, retention and delivery of best practice care, and suggests the need to bolster any system at each touch point. A discussion of strategies to enhance engagement is presented below. Furthermore, there is evidence that significant levels of symptomatic morbidity remain despite contact with health services. This raises important questions about the

There is evidence that significant levels of symptomatic morbidity remain despite contact with health services. This raises important questions about the availability and provision of evidence-based care availability and provision of evidence-based care to this population as well as the limitations of current evidence-based treatments.

4.1.6.2 MODE OF DELIVERY

The Pathways to Care report presented an interesting picture in relation to the types of preferred models of service delivery (Forbes et al., 2018). For example, although about 50% reported a preference for face-to-face delivery of mental health information, about 30% of both transitioned and regular ADF members reported an interest in, and a preference for, information delivered online, with transitioned members in particular tending to access the information late at night.

This is elevant for practitioners and policy makers as this approach has usually been put forward as a cost-efficient means of delivering services, but it is clear from the data that it is also seen as convenient, non-stigmatising and an opportunity to provide choice about how and where the service is delivered.

Mode of delivery is also important to consider in the context of culture and identity discussed above. These factors may influence the preferred types of treatments and services accessed. Here the issue of equity in knowledge and evidence production is important. There is a predominant focus on anglo-centric treatment modalities in mental health, and as such most EBPs reflect this. While this is slowly shifting with the increase in research into adjunctive interventions such as mindfulness meditation based on Eastern traditions, there is a need for a greater focus on the role of culture and identity in influencing treatment and service preferences.

4.1.6.3 TREATMENT FIDELITY

The research on effective treatments in mental health has come a long way in the last twenty years and recommended evidence-based treatments for most high prevalence conditions (including PTSD) exist that have the potential to help most Veterans (Australian Centre for Posttraumatic Mental Health, 2013; Bernardy, Hoge, Friedman, Riggs, & Schnurr, 2017; National Institute for Clinical Excellence, 2018). Although treatment fidelity can be reasonably assured during clinical trials (through regular checks from experts in the treatment), the same is not true for routine clinical practice. On the contrary, clinicians trained in specific approaches to treating PTSD in Veterans (e.g., PE and CPT) tend to drift away from the treatment protocol as time goes on. This may be justified as a decision based on clinical judgement (which may or may not be valid), or it may simply reflect a lack of commitment to the therapeutic approach by the clinician. Either way, it is important that Veterans' mental health service systems build in appropriate strategies to ensure continued treatment fidelity following training, such as regular supervision and consultation for therapists. Post-training consultation has been found to lead to greater uptake of evidence based care, increased self-efficacy on the part of therapists and better outcomes for patients (Foa et al., 2020). This issue will be addressed further in the following section.

4.1.6.4 RETENTION

An extension of the engagement discussion takes us to the question of retention – even if Veterans engage in treatment, will they remain in treatment long enough to receive a therapeutic dose? As noted above, of the few (9.1%) CAF members with a psychiatric disorder who sought treatment, the majority reported five or fewer visits in the past year (Fikretoglu et al., 2009) and the situation is similar in other countries. Recent US research reported that nearly 40% of Veterans who initiated EBT (prolonged exposure, PE, or cognitive processing therapy, CPT) dropped out of treatment prematurely, with around 25% of those dropping out after only one or two sessions. Although much research has explored reasons for drop-out, few consistent findings have emerged other than that younger Veterans were more likely to drop out than older Veterans (Eftekhari, Crowley, Mackintosh, & Rosen, 2019; Kehle-Forbes, Meis, Spoont, & Polusny, 2016). A recent qualitative study that asked Veterans why they terminated treatment prematurely, however, noted several factors including lack of buy-in to the rationale or specific therapy tasks, believing that treatment was not working, alliance issues, switching to a different treatment, finding treatment "too stressful" and practical barriers (Hundt et al., 2018). Whatever the range of reasons, it is clear that Veterans' mental health services need to address the problem of premature drop-out from treatment.

4.1.6.5 DEALING WITH COMORBIDITY, CHRONICITY, AND OTHER COMPLEXITIES

As noted previously, comorbidity is the norm rather than the exception in Veterans with mental health problems. Although the evidence is conflicting, it does appear that comorbid conditions such as depression, substance abuse, anxiety, guilt and anger at pre-treatment may adversely affect PTSD treatment outcomes (Phelps et al., 2018a; Richardson et al., 2014; Richardson et al., 2011a). Substantial research has been published regarding the treatment of PTSD in the context of comorbid substance abuse in Veterans, with the advice generally being to treat the two conditions concurrently (Back et al., 2019; Najavits, Krinsley, Waring, Gallagher, & Skidmore, 2018). However, most systems and treatment programs are not designed to treat concurrent conditions. As such there is surprisingly little guidance available to clinicians, either in the research literature or in the key treatment guidelines, regarding how and when to best manage comorbid conditions. Similarly, many Veterans present with chronic conditions. This almost inevitably means that other areas of the Veteran's life – relationships, employment, physical health, and so on – have been significantly affected by the time treatment is sought. Again, there is little to guide clinicians regarding evidence-based approaches to managing mental health problems in this context. Rather, clinical judgement and good common sense is required. Clearly, a broader psychosocial approach to recovery and mental wellness is indicated in the case of chronicity, comorbidity and other complex presentations.

4.1.7 Fragmentation and poorly coordinated care

Veterans' mental health service systems vary enormously across the world. Some countries, such as the USA, have very comprehensive Veteran-specific health services designed to provide care to Veterans across multiple levels. Others, such as the UK, have little or no Veteran-specific services but instead encourage Veterans to seek treatment through mainstream public sector health and mental health services. Canada and Australia have more of a mix, offering Veterans with mental health problems access to both Veteran-specific and mainstream (e.g., community-based psychiatrists and psychologists) mental health care. Regardless of the system, however, all of these models face a significant challenge in coordinating care for Veterans and their families. There are multiple points of entry into, and pathways through, all these systems. Effective communication becomes very difficult across multiple levels of, for example, severity (mild, moderate, severe), chronicity and complexity (acute single diagnosis, complex with multiple problems), and presenting problem (e.g., PTSD, substance use, relationship difficultly, occupational assistance). Inadequate coordination across multiple providers, settings, treatment goals, and so on will inevitably compromise the quality of care, with the most vulnerable and poorly supported Veterans at risk of falling between the gaps. It is, therefore, incumbent upon Veterans' mental health service systems to have the best possible care coordination models in place to facilitate communication between providers, Veterans and their families.

While mixed systems (e.g., Veteran-specific vs generalist, hospital-based vs community) have advantages in terms of offering choice to Veterans and their families, they also create potential problems. There is a danger that services and/or individual clinicians will see themselves as being in competition with each other, perhaps not always acting in the best interest of the Veteran community. There is also the risk of duplication of services, both geographically and in the context of a specific Veteran patient. At a time of limited resources, it is important to take these factors into account when considering the cost effectiveness of different Veterans' mental health service systems.

In some jurisdictions, such as the NHS in the UK, healthcare for Veterans, whether currently serving or transitioned, is encompassed in the overall public healthcare system. In the US, Veteran healthcare comes under the remit of the VA, which oversees an integrated health system providing care at more than 1200 facilities. More recently, in order to increase options of care for Veterans, this has been expanded to include the option of VA funded care within the community. This means that there is now a complex and diverse network of VA and community providers and Veterans have the option of deciding where to seek services (Greenstone et al., 2019).

In Australia the current structure of health service delivery for ADF personnel and Veterans varies according to whether a member is actively serving or not. Critically, there is a disjunction between the health services used during military service and those that are utilised at and following transition. One important issue is that services during and following transition, through DVA, are funded through the repatriation health schemes which have specific criteria for entitlements. This means that they are only accessed by those with entitlements, and are likely under-utilised due to differing regulations and funding. Despite significant initiatives, such as the white card for mental health disorders, the Transition and Wellbeing Research Programme (Forbes et al., 2018; Van Hooff et al., 2018) identified that a significant percentage of ex-serving (and even some current serving) ADF members primarily utilise health services funded by the Australian public health system and private health insurance funded care. This disconnection between the health services that a Veteran may utilise in their lifetime is likely to result in both diminished access to services and low uptake of evidence-based care.

In Canada, members of the CAF transition from a federally-run and highly specialized healthcare system, the Canadian Forces Health Services (CFHS), to a provincial, publicly-funded healthcare system at the end of their career (Aiken, Mahar, Kurdyak, Whitehead, & Groome, 2016). Veterans of the CAF may be supported by additional health benefits from Veterans Affairs Canada (VAC), however, only 35% of Regular Forces Veterans report receiving benefits (Thompson et al., 2014). Approximately one third of VAC clients are war service Veterans, one third are surviving families of Veterans, and 27% are CAF members or Veterans (Veterans Affairs Canada, 2014). The transition to civilian life is already a difficult adjustment for approximately 25% of Veterans and this difficulty may be exacerbated by challenges inherent in navigating appropriate health services within the provincial system after transition from the federal system (Thompson et al., 2011).

4.1.8 Gaps in evidence

As noted, while substantial gains have been made in recent years regarding the treatment of mental health conditions in Veterans, significant gaps in the evidence base remain.

With relatively high proportions of Veterans not responding to treatment, or showing only partial response, there is considerable interest in how to improve treatment outcomes. Several lines of inquiry are being pursued.

First, can existing treatments be augmented or improved? This may include, for example, adding highly specific pharmacological interventions such as MDMA, yohimbine, oxytocin and propranolol or behavioural interventions such as physical exercise, to an existing intervention such as PE (Metcalf et al., 2020). It may also include restructuring the intervention, such as very brief exposure interventions, or massed vs spaced PE (Foa et al., 2018).

Second, are there new treatments that should be trialled for PTSD and related conditions in Veterans? This requires some caution – rarely a week goes by without some new miracle cure being touted for PTSD and it is in no-one's interest to be promoting these in the absence of a strong evidence base. Nevertheless, some new approaches show promise, such as mindfulness (Boyd, Lanius, & McKinnon, 2018), cannabis derivatives (Abizaid, Merali, & Anisman, 2019), and technological interventions (e.g., mobile apps) (Sander et al., 2020).

Third, would better PTSD treatment outcomes be achieved if different treatment goals were targeted? One example is that of moral injury, a topic that has received much interest in recent years (Litz et al., 2009). It may be, for example, that targeting social functioning (relationships, social reintegration) or occupational functioning (voluntary or paid work, meaningful hobbies) would serve to reduce PTSD symptom severity and/or make the core disorder more amenable to treatment. All of these are important research questions, with the potential to be included in a research agenda.

As noted above, many Veterans are left with residual symptoms even after receiving an evidence-based treatment. Regrettably, little research has looked at the nature of these residual symptoms or, importantly, the best strategies to manage them. This leaves clinicians to make their own judgements about whether to address the problems that remain and, if so, how. While clinical judgement will always be an important factor, there are benefits to providing greater guidance to clinicians regarding desired end state functioning, how much time and effort should be devoted to addressing residual symptoms, and what kinds of interventions might be effective (where the EBT's have been unsuccessful). On a related theme, Veterans with PTSD and related conditions are at risk of relapse from time to time, especially when under stress such as interpersonal conflict, financial problems and health concerns, or when confronted with powerful reminders of their traumatic experiences. Although most clinicians have a good understanding of the relapse literature, most of this has been "borrowed" from the substance abuse field, and relapse prevention for PTSD specifically (i.e., when not comorbid with substance abuse) has received little attention.

In short, all of these gaps in the evidence present challenges for Veterans' mental health service systems and for the clinical teams working within them. Too often, they are required to use clinical judgement alone, which, while it may be very good, is no substitute for rigorous research findings to drive clinical decision making.

4.1.9 Families and peers not visible or leveraged

Families are still often not visible within Veteran health care system delivery and collaboration with services. These systems and services tend to be very fragmented and expert/patient dominated, however there is evidence that both families and friends are involved in encouraging care seeking as well as facilitating the pathways into care. In the Family Wellbeing Study, families themselves acknowledged the need for more responsive and streamlined service provision with more proactive and less complex processes and services for gaining mental health support for Veteran family members (Smart, Muir, & Daraganova, 2018). Given their important role in supporting Veterans, improving mental health literacy and system navigation knowledge is key to any service system design, and this is currently lacking.

A growing body of literature now exists around the important role that peers can play in supporting mental health and wellbeing and encouraging help seeking due to the benefits of lived experience (Jain, McLean, & Rosen, 2012). This role can be formal, that is as a part of a shared management, multidisciplinary team such as the peer-to-peer support network trial currently being conducted by Open Arms in Townsville, which is showing early promising results (Van Hooff et al., 2019). Alternatively, peer support networks can be informal through social networks that allow people to connect and communicate. Increasingly, Defence and Veteran specific forums are providing opportunities for online chats, however, they tend to be non-moderated (without facilitation and rules for engagement). Structured forums with peer facilitation, guided safety recommendations and principles of engagement are another area of support that could be explored further.

4.2 A case for change

There is widespread agreement that people who have served in their country's armed forces, as well as their families, deserve to have equitable access to innovative, world-class, evidence-based services and supports.

The preceding sections have highlighted the heterogeneity of the group, etiological considerations, and the specific needs of Veterans and their families, before going on to discuss the barriers to be overcome by them in gaining support, accessing services and engaging in treatment.

Given the heavy social, health, and economic burden created by posttraumatic mental health problems in the Veteran community, there is a strong case for systemic change designed to improve outcomes for Veterans and their families.

The social burden includes the damage to relationships both within and outside the family. The previous section highlighted the substantial impact on families of living with a Veteran suffering from posttraumatic mental health problems. With substance abuse, anger, emotional numbing and social withdrawal all common associated features of PTSD and related conditions, the home environment can become toxic for both partners and children, with corresponding impact on their mental health.

Beyond the family, the Veteran's mental health problems may result in disrupted and often dysfunctional relationships with friends and work colleagues, leading to increasing levels of withdrawal from work and leisure activities. Financial, housing, employment, relationship, legal and other stressors exacerbate the Veteran's already fragile mental state, feeding into a downward spiral of despair and hopelessness. It becomes progressively harder for the Veteran to function in, and be an active member of, society.

These social impacts not only create enormous distress and psychological suffering for all those involved, but also generate a substantial financial burden on the community. Compensation costs for Veterans' mental health problems run into many billions of dollars and losses to productivity are considerable. Multiple studies have shown that PTSD and related conditions are associated with substantial levels of disability, reduced productivity and loss of quality of life (e.g., Alonso et al., 2004). The World Mental Health Project explored disability associated with a range of physical and mental health conditions and found PTSD and depression (two of the most common conditions in Veterans) consistently resulted in the highest levels of partial disability (Bruffaerts et al., 2012). This disability, of course, constitutes a cost to the community. A study from Northern Ireland estimated that, in 2008, PTSD cost the community £140 million in reduced productivity (incapacity days or reduced productivity while at work), over and above the healthcare costs (Ferry et al., 2015).

Those healthcare costs are, of course, also considerable. People with posttraumatic mental health problems, and PTSD in particular, incur significantly higher healthcare costs than those with other psychiatric diagnoses (Ivanova et al., 2011; Walker et al., 2003). This includes increased use of outpatient and emergency department visits, mental health inpatient stays, physician contacts and medication (Lamoureux-Lamarche, Vasiliadis, Preville, & Berbiche, 2016; Mavranezouli & Mihalopoulos, 2020). While much of the research has been conducted

Summary case for systemic change	
Social burden	• Psychosocial stressors such as financial stress, housing concerns, homelessness, unemployment and reduced capacity for work. • Family stress, including increased risk of mental health problems in partners and children, domestic violence, divorce and family breakdown and child behavioural problems. • Social isolation, including loss of friendships and support networks, withdrawal from hobbies and leisure activities and lack of social participation in the community.
Health burden	• High levels of distress and poor quality of life for Veterans and families. • High mental health morbidity, including PTSD, depression, substance use disorders, anxiety disorders and suicide. • High associated physical health problems including cardiovascular, metabolic and musculoskeletal disorders. • High disability and high disability adjusted life years (healthy years lost).
Economic burden	• Increasing compensation claims for mental health conditions. • High healthcare costs for both physical and mental health conditions. • High unemployment, reduced productivity and impaired contribution to society.

with civilian survivors of trauma (e.g., motor vehicle accidents), a substantial body has also addressed the cost burden in Veterans. A study of US Iraq and Afghanistan Veterans suffering from depression with or without PTSD, for example, found greater use of specialist mental health treatments, other outpatient visits and antidepressant medications, as well as higher overall mental health care costs, in those with PTSD (Chan, Cheadle, Reiber, Unutzer, & Chaney, 2009). The US National Bureau of Economic Research estimated the health care costs for combat-induced PTSD following recent Middle East conflicts to be a minimum of US$1.5 to $2.7 billion (Cesur, Sabia, & Tekin, 2011).

Healthcare costs are by no means limited to mental health care, with PTSD and related conditions associated with a high level of physical health problems. A recent review of the area, for example, reported strong evidence for increased risk of cardiovascular, metabolic and musculoskeletal disorders among patients with PTSD (Ryder et al., 2018). Although the exact mechanisms underlying these relationships are not entirely clear, those authors also report that numerous studies have found alterations in the hypothalamic-pituitary-adrenal axis and sympathetic nervous system, inflammation and poor health behaviours in people with PTSD – all of which are likely to increase risk of illness. Regardless of the mechanisms, however, the increased costs to the health system caused by this physical ill-health represent a substantial additional burden beyond the mental health care.

In short, posttraumatic mental health conditions place a disproportionate economic burden on health systems, as well as on individuals, their carers and family, social care services and the broader society.

The positive news is that a consistent body of evidence points to the cost effectiveness of evidence-based treatment for PTSD and related conditions (e.g., Issakidis, Sanderson, Corry, Andrews, & Lapsley, 2004; Mavranezouli & Mihalopoulos, 2020). The challenge is one of ensuring that Veterans and their families are able to navigate the pathways to care and access those treatments. An improved system, with greater efficiency, better care coordination and enhanced treatment outcomes has the potential to make substantial cost savings in the longer term while improving quality of life for Veterans and their families in the short term. The evidence suggests that an efficient and effective Veterans' posttraumatic mental health system has the potential to reduce domestic violence, family breakdown, suicide rates, unemployment, homelessness and disability adjusted life years (healthy years lost), as well as making longer term savings in health and psychosocial care costs.

Enhancing the Veterans posttraumatic mental health system is not only an ethical obligation (serving those who served), and is crucial in improving wellbeing outcomes and community engagement for Veterans and their families, but it also has the potential to result in considerable savings across multiple sectors. Although there will be inevitable costs in enhancing the system, there are also substantial social, health and economic benefits to be gained over the longer term.

4.3 Future system design – a high-performing posttraumatic mental health system

Posttraumatic mental health supports for Veterans form a complex system that needs to interact with health, mental health and social care services. The system itself spans the public, private and not for profit sectors.

Posttraumatic mental health systems typically have no single organising entity who has overall responsibility for the outcomes for Veterans and their families. As such, it might be argued that it is not a system in the traditional sense, i.e. the organisation of 'actors' (providers, institutions, and other resources) to work coherently together to deliver an agreed objective (services to meet the needs of target populations). However, as discussed in the introduction, viewed through their eyes, for Veterans and their families it is a system and should, therefore, be acknowledged and approached as such.

There is no doubt that patches of good services and supports for Veterans and their families already exist in many countries, including Canada and Australia. However, as outlined earlier in this section, there are clearly opportunities for systemic changes designed to improve outcomes.

An understanding of posttraumatic mental health needs for Veterans and associated needs of their families provides a blueprint for a future system. A future system where:

- the central organising principle and focus for all entities within the system is the Veteran and their family; and
- Veterans and their families, without exception, report absolute confidence that their health and wellbeing is of the highest priority.

This future system design, which is represented visually, is built on the following seven principles:

1. Respect and dignity

Each Veteran and family member is treated as an individual. The system acknowledges and respects their unique aetiology, heterogeneity, choices, goals and priorities.

2. Engagement and involvement

The crucial role of the Veteran's and family's voice, as experts in experience, is integrated into all aspects of the system. The principle of 'no decision about me, without me' is widely adopted and honest, open and regular communication channels are in place between the Veteran, those involved in care of the Veteran and (with permission) family members. Shared decision making (SDM) is well embedded and mature concept at all levels of the system, but particularly in treatment services.

This principle also includes the adoption of and use of co-production / co-design models with meaningful and authentic engagement of people with lived and living experience.

3. Equity of access

The issue of equity in the context of Veterans posttraumatic mental health is central to this future system design and as a consequence this Conceptual Framework. As discussed previously, inequities may arise from social, economic, demographic and geographical factors, and include infringements of fairness and human rights.

3. Equity of access (continued)

A key characteristic of groups who may suffer inequity is a lack of political, social or economic power and voice. In turn this can lead to ongoing, systemic inequities in the ways certain populations receive appropriate care and others do not, and the quality of this care.

In addressing equity it is important to consider the issue intersectionality: how aspects of identity including gender, race/ethnicity, socioeconomic status, occupational context and geographical location may intersect and influence participation and representation in systems and services.

Together this requires consideration of mechanisms and drivers of potential inequity within all levels of the system of care based on these intersecting elements of identity; those who use the system, those who deliver services, and service system design and implementation.

In support of this, the development of sustainable systems that address inequity should be progressed alongside any opportunity to increase capacity across the sector for addressing systemic inequities.

4. Breadth of support

The system has a strong recovery focused approach based on wellness, prevention and early intervention with low intensity community based care options and with rapid access to acute and tertiary services for those who genuinely need it.

A broad approach to service delivery beyond traditional models of treatment to include, for example, attention to physical health, social support and reintegration and occupational rehabilitation.respects their unique aetiology, heterogeneity, choices, goals and priorities.

5. High quality treatment and care

Treatment options sit at the forefront of international views of current best practice. Evidence based where possible and, where an appropriate body of research does not exist, options are evidence informed. Where gaps exist, the focus is on building the evidence base of what works (through research, data and analytics), learning and adapting. Issues of equity in the quality of treatments available to Veterans are explicitly acknowledged and addressed.

The system has a strong focus on pathways of care and care coordination promoting partnerships, collaborations and convergence.

6. Holistic outcomes

Driving a range of outcomes for Veterans and their families beyond symptom reduction to include a wider outcome focus on social functioning and relationships, occupational functioning and meaningful activities, psychological wellbeing and quality of life.

7. Economically responsible

Balancing the best possible outcomes for Veterans and their families as the top priority, but achieving this in an economically responsible manner.

The long-term financial sustainability of the system is considered, but in the context of broader economic and financial benefits available from a high performing system.

These principles influence all domains of the future system design below:

*Figure 5: A Veteran-centric high-performing posttraumatic mental health system**

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* This diagram concept has been adapted from the Redbridge Health and Well-being services diagram presented in Ham & Smith (2020) Removing the policy barriers to integra

ated care in England

At the centre of the system stands the Veteran and their family, close to their home, with as much support provided as close to home as possible. This is the central organising principle and focus for all entities who operate within the system.

The system acknowledges the heterogeneity and diversity of the group and this **cultural competence** is evident across all services. The diverse cultural needs of Indigenous and other minority ethnic groups are addressed. The sustained and long-term engagement of Veterans and their families is embedded in all elements of the system, an approach that includes the family unit as well as individuals within the unit.

Posttraumatic mental health literacy is promoted to reduce information asymmetry. The system acknowledges that peers have a critical role to play in, for example, steering the person towards services and supports.

Services and supports are both **accessible** and acceptable to the Veteran community with help increasingly available across a range of service delivery modes, including digital channels, all tailored to individual need. Veterans and their families have universal equitable access to the same standards of services and supports regardless of geographical, cultural, demographic or socioeconomic status. Multiple strategies are deployed to optimise ease of access for Veterans and their families seeking assistance.

In terms of accessing services and supports, a **culture of inclusion** is actively promoted with a low threshold for entry. The early identification of distress and impairment is better facilitated and Veterans are encouraged to seek treatment.

A high quality **rapid assessment and treatment planning team** is in place, staffed by competent clinicians with a thorough knowledge of the full range of available services. Service navigation is an acknowledged function and skill set and distinct from care coordination. A life course approach is adopted, with touchpoints for screening, assessment and intervention at critical periods, and one that is responsive to changes in level of need and access.

Networks of treatment excellence exist, with a range of options and different treatment modalities available, ideally via only one single entry point of access.

Treatment planning for each individual is tailored to incorporate a thorough understanding of Veteran characteristics including deployment, postings and availability and access to military supports, the mental and physical health of the service member / Veteran, and psychosocial factors relating to family structure, roles, routines, caregiving and social interaction, and social supports.

Evidence-based treatment options and **measurement based care** are the default across a stepped / matched model of care with the most successful, evidence-based services and supports readily understood and scaled-up. Access to high quality acute and tertiary care is available given the frequency with which Veterans present in crisis. The consistency and quality of treatment and rehabilitation options are enhanced through the early engagement and retention of Veterans and their families. Treatment services are dedicated to maximising opportunities for the full return of function, perceived wellbeing and quality of life equal to that anticipated on the basis of pre-illness trajectories.

Services across multiple sectors are well coordinated, providing a seamless pathway for Veterans and their families moving between different parts of the system. Services cater for a wide range of psychiatric morbidity, but have close collaboration with specialist physical health services, occupational rehabilitation providers, etc. The best possible care coordination models are in place to facilitate communication between providers, service navigators, Veterans and their families. The continuity of health and mental health service provision is a fundamental focus to appropriately support

Veterans across numerous life transitions (including the transition from active military service).

In terms of improving services and supports, **existing services are mapped** and well understood, with gaps in service provision identified and the communication and coordination of pathways between services better designed. Appropriate strategies are in place to ensure continued treatment fidelity following training, such as regular supervision and consultation for therapists.

Evident 'learning system' principles and practices driving a system that is:

- Transparent, data and evidence driven (at all levels) and shares information and learnings across stakeholders at all levels;
- Receptive to QA and improvement practices;
- Dynamic, evolving and encourages continuous improvement;
- Focused on education, training and consolidation to drive excellence in care;
- Geared towards implementation and evidence in implementation - an environment for innovation and human-centred design in policy and frontline service delivery.

Clinical leadership and involvement is visible across all levels of the system and the integration of research, education and service delivery agendas is paramount. A Veteran centric research and research translation program is published and being progressed, significantly enhancing the 'time to service' for new cutting edge treatments.

Holistic organisational and workforce competency frameworks (including cultural competency) are operational at all levels of the system, with staff at all levels, but particularly at the point of service entry, skilled in "Veteran sensitive practice" and trauma informed care.

Big data and advanced analytics techniques, including AI, machine learning, etc. are consistently applied driving evidenced-based decision making. Advances in technology enablement and the eHealth and mHealth agendas are rapidly deployed and leveraged.

In terms of broader system enablers, **key system levers** around regulation, funding, policy, programs, workforce reform and performance are aligned and working towards the collective focus.

Funding models incentivise the access to and effective treatment of Veterans and their families. Services are properly funded, incentivised and appropriately committed to the posttraumatic mental health of Veterans and their families. More consistent funding mechanisms are developed across the wellness and care continuum, rewarding the right behaviours, outcomes and delivering care in the most effective and efficient setting (e.g., out-of-hospital). There is an increasing consideration of outcomes-based funding and reward across pathways and providers. This includes funding for research to address gaps in evidence and guide future 'next' practice.

There is a focus on long-term **financial sustainability** across the system, value-based care and balancing the efficiency agenda with desired outcomes, experience and service quality. Consistent standards and performance metrics are monitored across all service providers and across a range of indicators – access, quality/safety, outcomes, finance, etc.

4.4 Delivering on this vision and design

The previous sub-section provides a holistic design for a future, high-performing posttraumatic mental health system.

As noted at several points in this document, a broad range of stakeholders are able to influence the design of the system, the way in which it operates and the outcomes achieved for Veterans and their families.

These stakeholders include Veterans and their families, placed firmly in the centre of the system. They are supported and guided through the system by the broader Veteran community, notably formal and informal peer supporters, as well as the health professionals providing assessment services, treatment planning and mental health care to the individual and the family. Integral to the system is the close collaboration of, and integration with, agencies providing support and intervention in other areas including physical health, occupational rehabilitation and support, housing, financial counselling, and so on. Providing the overarching context in which the system sits and operates are, for example, the funding bodies and insurers, policy makers, regulators, administrators and system managers.

The active involvement of all these stakeholder groups in developing and operating a revised posttraumatic mental health system will be crucial – no single organisation can deliver this new, integrated system design alone.

Any program of work to build this will need to acknowledge the different starting points for each system – the various groups and organisations involved will have already made progress in different areas of the design – as well as the varying roles and responsibilities that each stakeholder group will take within each respective system.

This Conceptual Framework does not focus on building out all components of this future system design, rather one of the most fundamental components – best and next practice interventions and treatment. This draws on a range of principles and features of the future system design all centered around a macro model of care – a next generation, stepped / matched model.

5 Best and next practice interventions and treatment

The objective of this section of the Conceptual Framework is to provide an overview of current best and next practice intervention models and treatment programs.

This includes:

- A macro model of care – stepped / matched – to help organise best and next practice intervention models and treatment programs. This is described in sufficient breadth to allow universal applicability.
- Evidence for effective interventions and treatment programs (EBPs) across different 'tiers' of the model, primarily using treatment of PTSD as an example. This includes novel models of care and augmented treatment, where further evidence is still required.

This section is driven by the available 'best practice' evidence and includes discussion of future, evidence-supported 'next practice' initiatives. It is envisaged this will provide a structure around which current and planned initiatives in service development are considered, and offers a guide to developing systems and supporting future service innovation. The level of evidence for interventions, varies across tiers, with a trade-off often apparent between reach and effectiveness (Taylor, Fitzsimmons-Craft, & Graham, 2020). At the lower tiers, interventions are targeting the whole population and therefore intended to have broad reach. This may include, for example, online psychoeducation materials and self-help digital resources. At a population level, improved outcomes can be achieved if a large number of Veterans and families access such resources, even if they are only minimally effective. On the other hand, evidence-based treatments delivered in higher tiers by highly expert practitioners, have less reach but are more effective. For example, a small controlled trial conducted by Phoenix Australia in collaboration with Open Arms Veterans and Families Counselling Service, found that training in, and delivery of cognitive processing therapy (CPT), in a naturalistic clinical environment, delivered better outcomes than Open Arms treatment as usual (TAU). As shown in Figure 6, Veterans who received CPT achieved very large clinical outcomes (effect size 1.4) compared to moderate outcomes of .70 for those who received Open Arms TAU. This was then leveraged up when CPT was rolled out nationally across Open Arms to evaluate the first 100 cases where clinical outcomes remained large - with clinical effects of 1.0.

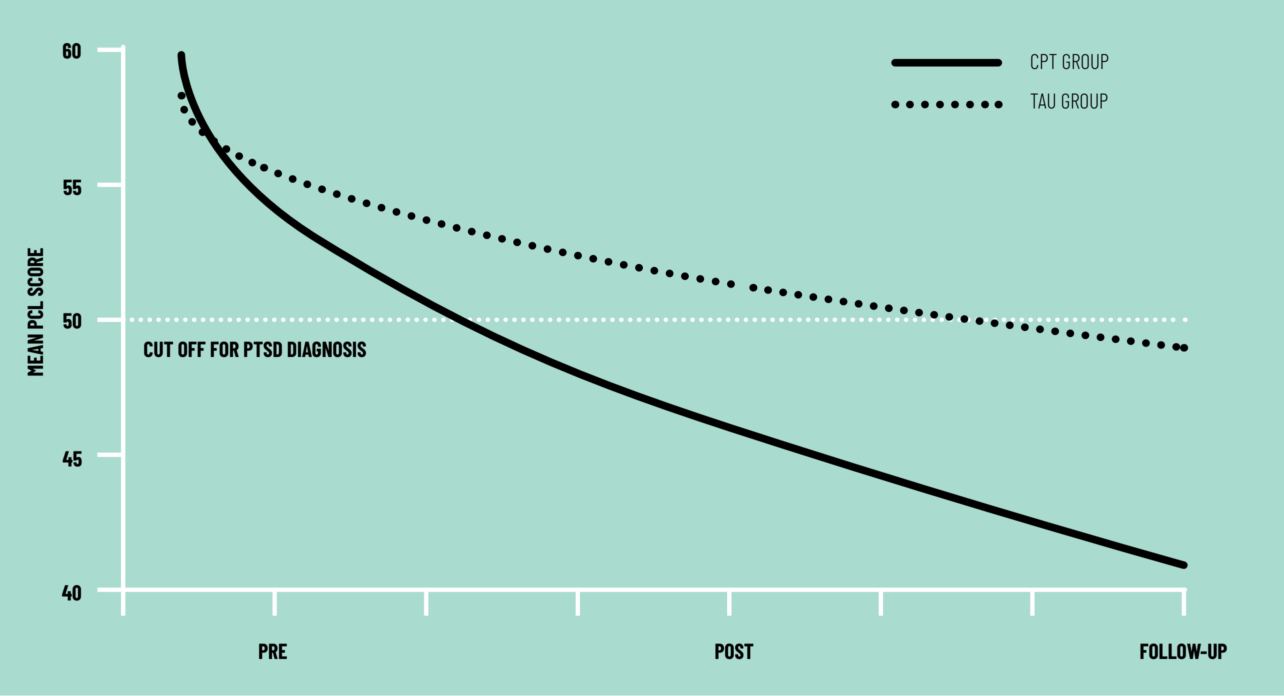


Figure 6: Clinical effects of CPT vs TAU in an Open Arms research trial (Forbes et al. 2012)

When seeking to optimise outcomes for Veterans and their families at a population level, both reach and effectiveness are important and the challenge is to focus on reach while also improving efficacy.

Key points from this section

Macro model of care
A macro model of care helps frame best and next practice interventions and treatment and itself sits within and draws on a range of principles and features of the overall future system design.

Proposed stepped/matched model
The proposed stepped / matched model pushes past the boundaries of current models, to create a dynamic service system that optimises outcomes at a population level with a simultaneous focus on reach, uptake, engagement and outcomes.

It adopts a holistic wellbeing approach, shifting the primary focus of the model (and the people working at all levels within it) towards Veteran and family wellbeing as distinct from an emphasis on psychopathology and symptom reduction.

Multimodal individual and family assessment at entry
The system has comprehensive multimodal individual and family assessment at the point of entry. This not only allows clinicians to match the Veteran and their family to the optimal service and support interventions for their particular needs, but also encourages shared decision making (SDM) to give the Veteran and their family an opportunity for input into the treatment planning process.

Intake, assessment, treatment planning available across all tiers
In addition to intake, assessment and treatment planning, acute assessment and intervention is available across all tiers. It is essential that an easily accessible acute assessment and triage service exists for Veterans and their families with sudden exacerbations in need.

Service navigators
Veterans and their families get support from 'service navigators' who are not only familiar with all components of the system, but who also know the Veteran and family well. These navigators facilitate their attempts to access the mental health system as well as the many other departments and agencies with which they will need to engage.

Care coordination
The service systems have the best possible care coordination models in place to facilitate communication between providers, Veterans, and their families.

Cross-organisational collaboration
An important component of this next generation model is engagement and close collaboration with other organisations providing supports and services. This includes, for example, primary care, other health services, occupational rehabilitation services, alcohol and drug services, family services, community services, supports provided by ex-service organisations (ESOs) and so on. Access to these supports is facilitated from any Tier within the model.

Evidence-based practice (EBP)
Evidence-based practice (EBP) is important in terms of best and next practice interventions. EBP is an approach to the delivery of mental health care that strives to integrate the best research and evidence with clinician expertise, as well as patient preferences and values.

- It aims to achieve higher quality care, improved patient outcomes, reduced costs and greater staff and patient satisfaction than traditional approaches.
- It aims to engage staff and patients in identifying practices that can be improved, barriers and enablers, designing and implementing an intervention based on evidence, reviewing and adjusting the intervention, and designing strategies to maintain the change.

5.1 A macro model of care – the next generation of stepped / matched

This macro model of care sits within the future system design outlined in the previous section and it draws on a range of principles and features of that design. It also has a number of overlaps with the next section of the Conceptual Framework in terms of how systems can approach the implementation of best and next practice in services and supports. The proposed stepped / matched model pushes past the boundaries of current models, to create a dynamic service system that optimises outcomes at a population level with a simultaneous focus on reach, uptake, engagement and outcomes (Taylor et al., 2020). All components of the model are based on trauma informed practice, "a strengths-based framework grounded in an understanding of and responsiveness to the impact of trauma, that emphasises physical, psychological, and emotional safety for everyone, and that creates opportunities for survivors to rebuild a sense of control and empowerment" (K Hopper, L Bassuk, & Olivet, 2010).

The broad principle of stepped care models of health service delivery is widely accepted. These models are used in many countries across a diverse range of health and mental health settings as a framework against which to map services and needs, and to identify gaps in the system.

The key challenge, and one that traditional stepped care models often fail to meet, is that of facilitating entry into the system at multiple points and facilitating movement within the system across levels of treatment intensity and sophistication according to need.

Traditional stepped care models typically insist on the person entering at, or close to, the lowest level of care, and only moving to the next level once those interventions have proved ineffective. The purported benefit to this approach is that

Figure 7: Next generation stepped / matched model

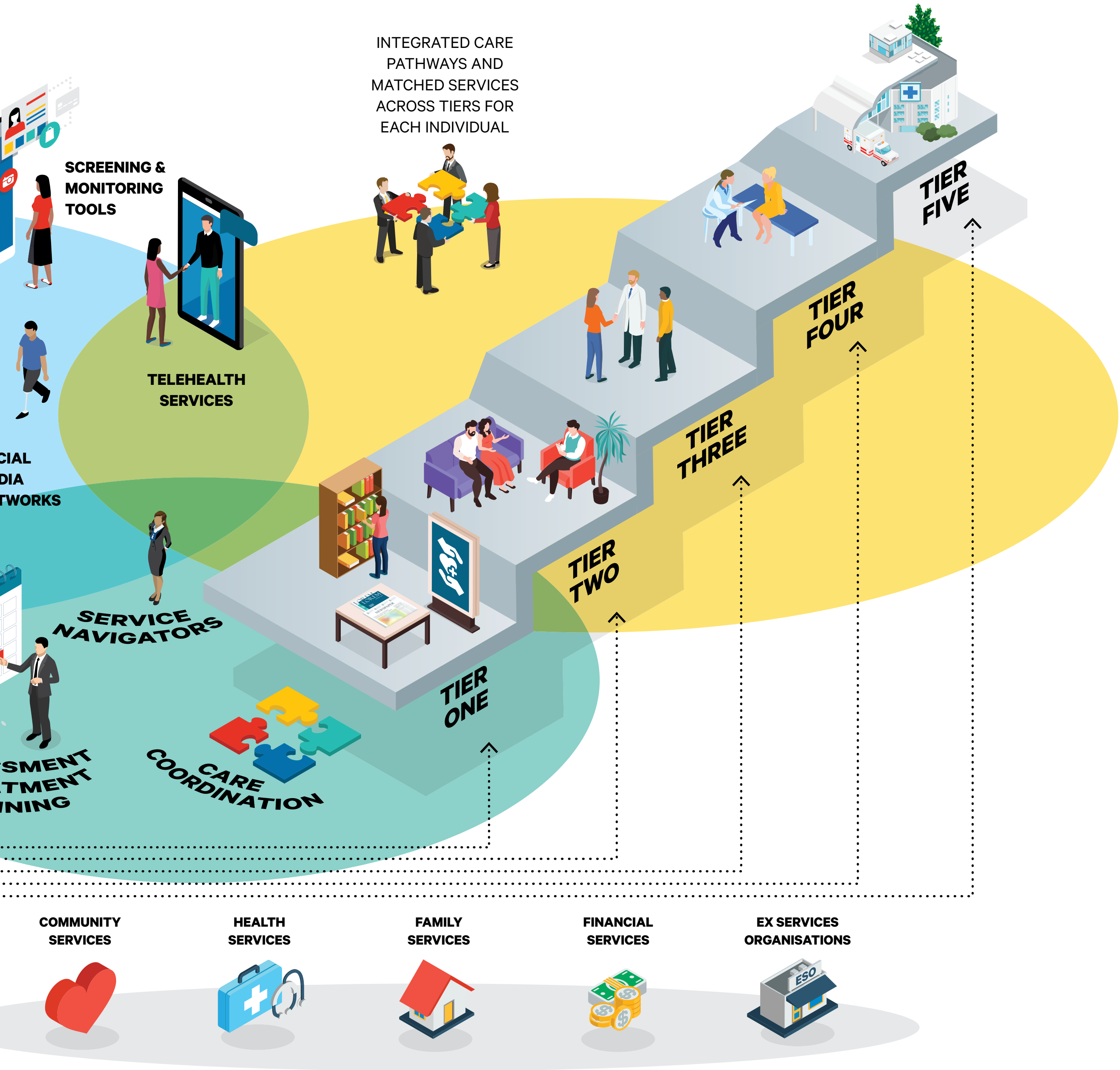
LS

YSTEMS
RT NETWORKS

STEPPED MATCHED MODEL OF CARE

EVIDENCE-BASED TREATMENT AND MEASUREMENT-BASED CARE

CONTINUITY OF SUPPORT ACROSS LIFE TRANSITIONS
POPULATION HEALTH AND PROMOTION PRINCIPLES



BROADER SYSTEMS OF CARE

AWARENESS AND ‘WARM’ REFERRAL PATHWAYS

In traditional stepped models, people enter at the lowest level of care, then move to the next level once those interventions prove ineffective. The next generation stepped model facilitates entry into the system at multiple points, according to need.

more intensive (and expensive) levels of care are only provided if they are really needed, and are not used for people whose needs would be met by less intensive interventions. The disadvantage is that people entering the system can waste valuable time going through interventions that are really not suited to their level of need, resulting in frustration and increasing the risk of 'giving up'.

The proposed next generation stepped / matched model outlined on the previous page, builds on the 'Tiered Model of Services and Supports: A Mixed Stepped-Care/Matching Approach', prepared by the Royal Ottawa Health Care Group and Atlas Institute. It differs from traditional models in a number of ways:

- It adopts a holistic wellbeing approach, shifting the primary focus of the model (and the people working at all levels within it) towards Veteran and family wellbeing as distinct from an emphasis on psychopathology and symptom reduction.
- It allows the person to enter directly at the appropriate level for their need at that time.
- In addition to a thorough assessment at entry, decisions regarding needs throughout the course of treatment are made collaboratively by Veterans and their families with providers through continuous outcome monitoring using a variety of valid and reliable assessment tools.
- It provides multiple levels or 'tiers' of services and supports depending on need and severity. The aim is to match individuals – whether that be Veterans or their families – to the level of care that best meets their need. With appropriate clinical review, and/or a navigation aid (a map, information, a peer navigator), the Veteran (or family) can move to a more, or less, intensive level of care within the system depending on their need at that point in time.
- It ensures the least resource-intensive tier reaches the largest number of people, with each successive tier designed to meet the needs of progressively fewer people, such that the top tier of intensive care is reserved for the small number who most need it. Thus, the base of the model – designed to promote good psychological health for all Veterans and their families –places a strong emphasis on health promotion, with strategies designed to build health and wellbeing literacy, to build resilience and coping, and to build supportive communities and promote social connectedness. The top of the pyramid includes highly intensive inpatient treatment for those with the most serious mental health issues.
- It provides multiple treatment options within each tier in order to best match the specific treatment modality to the unique characteristics and needs of the Veteran.
- It commits to measurement based care (MBC) – the routine use of outcome and process data to inform clinical decision making in consultation with the Veteran and care team. The collection and measurement of outcomes, and assessing those outcomes at baseline and throughout any episode of care, allows both the clinicians and the Veterans (or partners) to regularly review and monitor the progress of treatment. This

is built from an agreed portfolio of validated measures of patient-centered outcomes across a spectrum of conditions.

- It incorporates a combination of face-to-face services and digital resources that work in harmony together and are integrated via concepts of service navigation (including digital navigation) and care coordination.
- It encompasses an understanding of and integration with wrap-around support services for Veterans and their families.

These distinctions, together with mechanisms of intake, assessment, system navigation and care coordination, means the stepped / matched model holds the potential for personalised care delivered flexibly and in a trauma-informed way to meet the ever-changing needs of Veterans and their families.

5.2 Fundamentals of the next generation of stepped / matched model

Before exploring the tiers within the model it is important to outline the fundamental features that contribute to a successful application of the model.

5.2.1 Intake, assessment and treatment planning

Crucial to this next generation model is the role of comprehensive multimodal individual and family assessment at the point of entry. This not only allows clinicians to match the Veteran and their family to the optimal service and support interventions for their particular needs, but also encourages shared decision making (SDM) to give the Veteran and their family an opportunity for input into the treatment planning process. This is critical, particularly in addressing challenges outlined in section 4, such as attitudes around self-management, preferences for treatment modalities, and identity related values and beliefs.

The assessment at entry is crucial to the successful engagement of the Veteran and family in the system – they need to feel that their voice is being heard, that their needs are understood, and that the system is capable of providing the help that they seek. Families need reassurance that the burden of care that they carry will be reduced. This approach is consistent with current moves towards personalised medicine and treatment approaches.

In terms of treatment planning, while strong evidence to guide treatment matching between existing evidence-based treatments (EBT) does not exist, for example, who will benefit more from prolonged exposure (PE) than cognitive processing therapy (CPT), clinical judgement should not be ignored. Most importantly, the treatment plan needs to be developed in close collaboration with the Veteran and/or the family member.

5.2.2 Acute assessment and intervention

In addition to intake, assessment and treatment planning, acute assessment and intervention is available across all tiers. It is essential that an easily accessible acute assessment and triage service exists for Veterans and their families with sudden exacerbations in need. These acute episodes may occur in the context of mild, moderate, or severe underling problems, but it would generally be assumed that the Veteran is currently not closely linked in with a specialist service to whom he/she can turn in times of crisis. Such scenarios are not uncommon in the Veteran community and may be triggered by a range of life stressors such as relationship conflict, financial or employment problems, and substance abuse. Ideally, the services being accessed by the Veteran at that time will respond as best they can, but they will usually require a specialist to whom they can turn for expert opinion and acute care.

The acute assessment service is, ideally, available at all times to assess the Veteran and to arrange whatever level of care is indicated (wherever possible, of course, opting for the least intensive level required to meet the need). While sometimes a referral back to the peer group or community provider might be sufficient, the team needs to have access to acute admissions where there is a clear risk to the self or others.

5.2.3 Service navigation

The stepped / matched model is comprised of multiple components operating both within and outside traditional mental health settings. While some Veterans might only access one component of the model – a brief episode of treatment, for example – many will be accessing multiple services across several tiers. Those Veterans and their families get support from 'service navigators' who are not only familiar with all components of the system and related services, but who also know the Veteran and family well. These navigators assist the Veteran and family, facilitating their attempts to access the mental health system as well as the many other departments and agencies with which they will need to engage.

A premise of this function is that services are mapped, understood and continually updated, and that service navigators either complete this mapping or have ready access to it.

Service navigation occurs at varying levels of intensity. Operating within a wellbeing focus, a fundamental starting point for all are strategies to empower the consumers of services –Veterans and their families – to function as their own navigators, at least to a certain extent. This involves educating the Veteran community about the various components of the posttraumatic mental health system and related services. It will include written and digital sources e.g., a guide to services and how to access them – thereby giving them the skills to be active participants in decisions regarding their own care. For some, this may be all that is required. In this level of support the inclusion of digital navigators is vital.

Those requiring slightly more service navigation guidance are provided with education and support from, for example, specially trained peers drawn from within the Veteran community. Indeed, although they would not be expected to function as full service navigators, peers have an important role to play as navigators working closely with the Veteran and their family regardless of the level of service being provided.

For those with greater mental health needs requiring interventions from the middle tiers of the model, the role is managed by one of the treating providers such as the general practitioner, psychologist, or psychiatrist. This is already a role carried out by many providers.

At the more severe end of the spectrum, complex cases with multiple needs will require navigation support combined with more intensive case management and coordination to facilitate an integrated approach to care. Service navigation is a distinct function from care coordination which is explored next.

5.2.4 Care coordination

Veterans' posttraumatic mental health services vary enormously across the world. Some countries such as the USA have very comprehensive Veteran-specific services designed to provide care to Veterans across multiple tiers. Others, such as the UK have little or no Veteran-specific services but, instead, encourage Veterans to seek treatment through mainstream public sector health and mental health services. Canada and Australia have more of a mix, offering Veterans with posttraumatic mental health problems access to both Veteran-specific and mainstream (community-based psychiatrists and psychologists) posttraumatic mental health support.

Regardless of the system, however, all these models face a significant challenge in coordinating care for Veterans and their families. There are multiple points of entry into, and pathways through, all these services. Effective communication becomes very difficult across multiple levels of, for example, severity (mild, moderate, severe), chronicity and complexity (acute single diagnosis, complex with multiple problems), and presenting problem (e.g., PTSD, substance use, relationship difficultly, occupational assistance).

> Operating within a wellbeing focus, a fundamental starting point for all levels are strategies to empower the Veteran and their families to function as their own navigators.

Inadequate coordination across multiple providers, settings, treatment goals, and so on will inevitably compromise the quality of care and the less able and less supported can fall between the gaps. It is, therefore, incumbent upon posttraumatic mental health service systems to have the best possible care coordination models in place to facilitate communication between providers, Veterans, and their families.

While mixed systems have advantages in terms of offering choice to Veterans and their families, they also create potential problems. There is a danger that services and/or individual clinicians will see themselves as being in competition with each other, perhaps not always acting in the best interest of the Veteran community. There is also the risk of duplication of services, both geographically and in the context of a specific Veteran.

While case coordination at this level has been around a long time, the quality of this support varies enormously. If it is to be done effectively with complex clinical cases, the role has a high level of competency, along with adequate resources and sufficient time to devote to the Veteran and their family during intensive phases of care. Case example 1 (section 5.4.1) provides an illustration of care coordination in practice.

5.2.5 Holistic view of the system and integrated pathways

The posttraumatic mental health system should not (and cannot) operate in isolation, cut-off from the broader community's activities, supports and services. It is unrealistic and unhelpful to assume all needs will be met by the posttraumatic mental health system. The full continuum of education, employment, housing, and other supports provided in the community are critical to facilitate recovery for each Veteran and their family.

Veterans and their families have the right to access care, support, and wellbeing activities in their community and there are advantages to assisting their engagement with non-Veteran and non-posttraumatic mental health services. An important component of this next generation model is engagement and close collaboration with other organisations providing supports and services. This includes, for example, primary care, other health services, occupational rehabilitation services, alcohol and drug services, family services, community services, supports provided by ESOs and so on. Access to these supports is facilitated from any Tier within the model.

Throughout the model, but particularly at Tiers 1 and 2, active engagement of the ex-service community is fundamental to success. These individuals and organisations are core planks in the Tier 1 and 2 services. Perhaps the most important of these is the peers who will be providing support to Veterans and families struggling with mental health issues. Some, such as specialised peer support workers and recovery coaches, will be part of formally constituted peer support programs, trained and paid for their work. These peers, who are usually associated with ex-service or other volunteer organisations, often have a welfare focus and help to address a range of psychosocial needs. They have the skills to identify Veterans and family members in need of more specialised care and are able to work across the tiers to provide active service navigation and pathways to care.

Other peers will be part of the large informal networks of Veterans and partners supporting each other. The importance of this type of peer support cannot be overstated and anything the service system can do to support them should be considered. Similarly, as noted above, the ex-service and other voluntary organisations will play a vital role in Tiers 1 and 2 disseminating information, facilitating access to resources, providing support, and assisting Veterans and partners in navigating the pathways to care.

5.2.6 Research, evaluation, and continuous improvement

The phrase 'research and evaluation' covers a wide spectrum of activities designed to increase knowledge and, ultimately, to improve outcomes.

A high performing Veterans' posttraumatic mental health system places a strong and explicit priority on research across all levels of the system. Measurement based care (MBC), described in more detail in Section 6.4.6 Using Data and Feedback to Sustain Change, forms the basis of an evaluation framework for a service or set of interventions - a process of continually evaluating, feeding back, and improving the quality of services. Without MBC, a comprehensive evaluation process, and regular access to the latest research findings, opportunities for service development are seriously handicapped. It becomes impossible to develop clinical policies and practice guidelines informed by real world, locally relevant data.

However, in addition to the ongoing evaluation that is part of the everyday operation of a service or system, there are many advantages to developing a broader program of research in the domain of Veteran and military posttraumatic mental health. Ideally, a service will fund the core infrastructure for such a program e.g., in the form of a research director and perhaps one or two additional staff, but funding for actual projects will generally need to be sought competitively elsewhere e.g., government departments, research funding bodies, philanthropic organisations. The great strength, however, is the enormous scope for research on service users (with, of course, appropriate ethical and consent approvals) with relatively low additional costs.

A research agenda should be developed in consultation with key stakeholders (including the Veteran community) to prioritise those research projects that are most likely to be of benefit to Veterans and their families.

Key areas for future research

Treatment non-response:

- Validated objective definitions of treatment response and non-response: how is it decided on what constitutes a good response to treatment?
- Responding to non-response: what should clinicians do when the treatment of choice is ineffective? Can evidence-based algorithms be developed?

Factors associated with treatment response: why do some Veterans respond better than others?

- Genotype predictors of response to particular pharmacological and/or psychological treatment approaches
- Neurological/biological predictors of treatment response to specific interventions (e.g., portable EEG, heart rate, and other related data)
- Psychological profiles (e.g., personality style, history, intelligence) that predict treatment response overall and/or to specific interventions

What can be done to improve treatment effectiveness?

- Examine the impact of expanding delivery of evidence-based treatments to other care settings (e.g., primary care, telemedicine)
- Examine the relationship between patient engagement and aspects healthcare such as commitment to a recovery orientation, clinic processes, access factors, wait-time, etc.

Measurement research:

- Refine measures to accurately capture the complexity of stigma and help seeking
- Refine measurement of adherence behaviours (e.g., treatment completed in expected timeframe, completion of homework assignments, contribution to therapy sessions), identifying potentially modifiable factors and evaluating adherence interventions.

Suicide research:

- Improved data collection on Veteran completed suicides, attempts, and suicidal ideation with a view to enhancing international consistency
- Improve coordination nationally and internationally to leverage off combined data sets and progress the field, possible using machine learning techniques
- Increase the focus on identifying pathways or algorithms of suicidality, rather than generating more lists of risk and protecting factors.

5.3 Overview of tiers and best practice by tier

Having provided a broad overview of the model, the following sub-sections provide an overview of each tier, including a brief description of what each tier comprises in terms of Veterans' posttraumatic mental health services, but then importantly outlines the target populations, example best and next practice interventions within that tier and an indication of the quality of the evidence around those interventions.

Evidence-based practice (EBP) is important in terms of best and next practice interventions. EBP is an approach to the delivery of mental health care that strives to integrate the best research and evidence with clinician expertise, as well as patient preferences and values. EBP aims to achieve higher quality care, improved patient outcomes, reduced costs, and greater staff and patient satisfaction than traditional approaches to care. It aims to engage staff and patients at all levels in identifying practices that could be improved, identifying barriers and enablers, designing and implementing an intervention based on research evidence and patient data, reviewing and adjusting the intervention as required, and designing strategies to maintain the change (Straus, Glasziou, Richardson, & Haynes, 2018).

Note that what now follows is a broad model and the exact delineation of each tier is not of great importance. More important is the capacity of individuals to access the appropriate tier easily and to move through the system, both 'up and down', as their needs change.

5.3.1 Example summary EBP menu

The table on the next page provides a summary EBP menu focused predominantly on PTSD interventions, and reflecting content discussed in more detail within each sub-section that follows. It is not intended to be exhaustive, and does not contain all evidence-based interventions for PTSD and other posttraumatic mental health conditions. Rather it is intended provide examples of what could be included, and could be built out further and leveraged by all stakeholders in a posttraumatic mental health system.

In the following table and in each of the tiers in the sub-sections below, the quality of evidence for impact is highlighted as follows:

Green:	Interventions with high evidence of impact, that we can be confident of as first line best practice.
Amber:	Interventions with moderate evidence of impact, which may require some further research and evidence to confirm this.
Red:	Interventions with low evidence of impact require further research to determine with confidence their true impact.

Tier 0: Population health	Tier 1: Informal community supports	Tier 2: Formal community supports and services (including GPs)	Fo me a
🟨 Mass media public health campaigns 🟨 Public anti-stigma campaigns 🟥 Targeted Military mental health public awareness campaigns	🟩 Social connectedness programs 🟨 Reducing Stigma program - R2MR 🟨 Reducing Stigma program - TWM 🟨 Reducing Stigma program - Opening Minds	🟨 Low intensity CBT 🟨 Online therapies 🟨 Self-help digital applications 🟨 Bibliotherapy 🟨 Telephone support services 🟨 Pharmacology – short term 🟨 Single session or brief A&D treatments 🟨 Community and peer led support groups 🟨 Low intensity peer-support (peers trained)	🟩 Cognit (CBT) 🟩 Cognit (CPT) 🟩 Cognit 🟩 Eye m and re 🟩 Prolon 🟩 Traum 🟨 Psych 🟨 Brief t

Legend

🟩 Interventions with high evidence of impact, that we can be confident of as first line best practice.

🟨 Interventions with moderate evidence of impact, which may require some further research and evidence to confirm this.

🟥 Interventions with low evidence of impact require further research to determine with confidence their true impact.

Table 1: Summary EBP menu focused predominantly on PTSD interventions

Tier 3: ormal posttraumatic ental health services and social services	Tier 4: Specialist posttraumatic mental health services	Tier 5: Highly intensive posttraumatic mental health services
tive behaviour therapy tive processing therapy tive therapy (CT) ovement desensitization processing (EMDR) ged exposure (PE) na-focused CBT (TF-CBT) o-education herapy	🟩 • Cognitive processing therapy (CPT) • Cognitive therapy (CT) • Eye movement desensitization and reprocessing (EMDR) • Prolonged exposure (PE) • Trauma-focused CBT (TF-CBT) • Collaborative chronic care models (CCMs) 🟨 • Narrative exposure therapy (NET) • Present-centred therapy (PCT) • Stress inoculation training (SIT) • Group TF-CBT • Guided internet-based trauma-focused CBT • Selective serotonin reuptake inhibitors (SSRIs) • Venlafaxine 🟥 • Couples trauma-focused CBT • Group and individual (combined) TF-CBT • Single-session trauma-focused CBT • Non-trauma-focused CBT • Meta-cognitive therapy • Reconsolidation of traumatic memories (RTM) • Virtual reality therapy (VRT) • Written exposure therapy (WET) • Ketamine, Quetiapine • Repetitive transcranial magnetic stimulation (rTMS) • Neurofeedback • Mindfulness-based stress reduction (MBSR) • Transcendental Meditation (TM) • Acupuncture • Yoga, Physical exercise	🟨 • Trauma Recovery Programs (Aus) • Intensive Treatment Programs (UK)

5.3.2 Tier 0: Population Health

Overview

Veterans' mental health services do not (or, at least, should not) operate in a vacuum. Rather, they are one part of a broad, population-based health approach to the Veteran community. As such, there should be a seamless integration between more specialist mental health services and population-wide mental health promotion, illness prevention and early intervention activities targeted at Veterans and their families. Tier 0 of this model covers these interventions.

A population health approach strives to meet the needs of whole groups of people, that is, all of the Veteran community, including families, rather than simply those of the individual. It takes a preventative focus wherein the needs of the general population (keeping the well, well) are addressed, as well as the needs of those requiring increasingly intense and sophisticated levels of mental health and wellness services.

Target populations / eligibility

A whole of population approach inclusive of all Veterans and their families.

Primary treatment role and treatment context

To provide a focus on the improvement and maintenance of wellbeing in the entire community including minority groups and cultures. At the same time, initiatives that raise awareness of mental health issues and mental health resources, as well as those encouraging prevention and early intervention, are pursued within Tier 0.

Best and next practice interventions

Interventions that support good health and wellbeing and build resilience in order to provide a platform for all members of the community, including Veterans, to flourish. Interventions are typically awareness campaigns focused on:

- Public health awareness, e.g., positive messaging around physical activity, promoting a more active lifestyle and education about health risks associated with obesity.
- Preventative health, e.g., suicide prevention, smoking cessation, reduced alcohol use and misuse and reduced alcohol harms such as drink driving, and safe sex campaigns including HIV prevention.
- 'Health checks' and screening, e.g., the value of vaccinations, cancer screening – bowel, cervical, breast, prostate and skin (melanoma), identification of signs and symptoms of heart disease, stroke and type II diabetes and the value of early intervention.
- Health and mental health literacy, e.g., provision of information about how to maintain health and identify illness, understanding how and where to access care, and how to evaluate and understand health information and health care.
- Reducing stigma, e.g., stigma-reduction training (Dickstein, Vogt, Handa, & Litz, 2010; Hurtado, Simon-Arndt, McAnany, & Crain, 2015).

Specific examples of interventions

Common public mental health campaigns related to Veterans are focused on reducing stigma, raising awareness and promoting help seeking. Some examples include:

- **Movember Canada** - a leading charity aiming to change the face of men's health. Since 2003, Movember has funded more than 1,250 men's health projects around the world. This charity provides a male-focused lens to suicide prevention, intervention and health promotion. Their work is focused on education, promoting healthy conversations, advocacy, services, research and community-based approaches.
- **Man Up** - a three-part documentary funded by Movember Australia that explores the relationship between traditional masculine norms such as stoicism and self-reliance, and suicide. A randomised controlled trial demonstrated significant increases in men's help-seeking intentions after viewing the documentary (manup.org.au).
- **The Real Warriors Campaign** - a multi-media public awareness initiative launched in 2009 following a mandate issued by the US Senate to reduce obstacles to psychological health care and to promote accurate information about psychological health to the military community. Real Warriors is now a part of the US Defense Health Agency Research and Development Directorate, Psychological Health Center of Excellence.
- **Beyond Blue's Man Therapy** - a multi-platform campaign encompassing TV, radio, print and online executions, aimed at raising men aged 30-54's awareness of the signs and symptoms of depression, and encouraging men experiencing signs and symptoms of depression to take action by visiting the Man Therapy website (www.mantherapy.org.au).

5.3.2 Tier 0: Population Health (continued)

Certainty of the evidence)

Moderate

There is moderate evidence of the impact of these types of interventions within whole-of-population studies.

Mass media public health campaigns have generally aimed to increase knowledge, raise awareness and modify attitudes, with the goal of increasing good health behaviours.

Evidence of changed behaviour resulting from this has been found, with improved evaluations offering increasing knowledge of the circumstances by which these campaigns can have impact. See also:

- Wakefield, M., Loken, B. & Hornik, R. (2010). Use of mass media campaigns to change health behaviour. The Lancet, 376 (9748), 1261-1271.
- Quattrin, R., Filiputti, E. & Brusaferro, S. (2015). Health Promotion Campaigns & Mass Media: Looking for evidence. Primary Health Care, 5, 1.
- Public Health Association Australia. (2018). Top 10 public health successes over the last 20 years. PHAA Monograph Series No. 2, Canberra: Public Health Association of Australia. (https://www.phaa.net.au/documents/item/3241)
- Lotfi-Jam, K.L., O'Reilly, C.L., Feng, C.S., Wakefield, M.A., Durkin, S. & Broun, K.H. (2019). Increasing bowel cancer screening participation: integrating population-wide, primary care and more targeted approaches. Public Health Research & Practice, 29(2): 2921916.

Low

There is little evidence of the impact of these types of interventions with Veteran populations, primarily due to there being insufficient evaluations examining this, that are limited by sample size and interpretation challenges.

Finally, with regard Veterans more specifically, there are challenges in evaluating the impact of more targeted military mental health public awareness campaigns with the primary outcome being increased mental health treatment utilisation. Specifically, Acosta et al. (2019) caution against evaluations of these targeted campaigns in smaller sub-sets of the population given they are typically underpowered and interpretation of results is often more speculative than driven by good evidence.

5.3.3 Tier 1: Informal community supports

Overview

The primary goal of this tier is to maintain wellness and to prevent the development of significant problems through improving awareness, self-care and naturally occurring support networks.

Interventions aim to build health and wellbeing literacy, to build resilience and improved coping, to build supportive communities and promote social connectedness, and to promote positive stereotypes of life for Veterans and their families following service (as distinct from models, expectations and incentives that may serve to promote illness and disability).

A key plank at this stage is the provision of a range of psychoeducation strategies targeted at Veterans, their families, ex-service organisations (ESOs) and the broader community. These are offered in multiple modalities, e.g., printed leaflets and newsletters, mobile apps and websites, podcasts and stories/articles in the media. As such, they would (in most cases) be widely and constantly available. While there are costs involved in the initial design and implementation phases, ongoing costs should be minimal. Content might, for example, include information around the kinds of problems Veterans and their families may encounter, simple self-care advice, and the importance of social engagement and support, as well as how and when to seek further assistance should it be required.

All of these initiatives can be targeted not only at Veterans, but also at partners and families. The role of peers in this process (and indeed, at every stage of the model) cannot be understated. Volunteer networks such as ESOs and other peer support groups play a central role in disseminating this information and helping Veterans and families to use it effectively.

A second broad approach at this tier is to facilitate the development of naturally occurring support networks through encouraging (and possibly sponsoring) initiatives such as Men's Sheds, walking groups and volunteer groups, e.g., gardening and simple house maintenance for the elderly. The advantage of these groups is that they are oriented towards a specific task rather than focusing overtly on support for Veterans and families (which might be too threatening for many). This kind of group may also be of great benefit to partners and children, providing an opportunity to share experiences and advice with others in similar situations.

This tier is designed for the whole Veteran community and does not wait for Veterans or family members to self-identify as having problems. As such, it has a very broad reach, low resource costs and great potential (if done properly) to reduce the need for specialist care. Where a need does exist, it is designed to facilitate engagement in appropriate care in a non-threatening and non-intrusive manner.

5.3.3 Tier 1: Informal community supports (continued)

Target populations / eligibility

There are some similarities to Tier 0 activity at this level but the focus is on a broad, whole of Veteran population approach to wellbeing.

Initiatives do not necessarily target any specific problem or pathology, and interventions are preventative in nature but are of particular relevance to Veterans and Veteran's families that are struggling, vulnerable or 'at risk' of deterioration with regards their mental health and general wellbeing.

Primary treatment role and treatment context

The primary treatment role at this tier is to support aims to raise Veteran's mental health literacy through educative initiatives that improve awareness of good health and mental health practices, promote the importance of, and a commitment to good self-care, and provide the opportunity for increased social connection and enhancement of supportive social networks. Engagement with the greater community and ESOs to broaden supportive social networks is a priority.

Best and next practice interventions

1. Increasing mental health literacy, information dissemination and educative initiatives that are typically developed for and delivered via:
    - Websites
    - Webinars
    - Considered use of social media
    - Printed leaflets and newsletters
    - Mobile apps and websites
    - Podcasts and stories/articles in the media
2. Addressing issues of stigma specifically in the Veteran population.
3. Building social connectedness through Veteran and general community based groups and organisations.
4. Implementing initiatives to raise awareness of peer support networks, how to access these and what they can offer as a means to develop links in the greater community.
5. Developing links to ESOs, emphasising the value of community connections and raising awareness of offers of advocacy and welfare support.

5.3.3 Tier 1: Informal community supports (continued)

Specific examples of interventions

REDUCING STIGMA

The Road to Mental Readiness (R2MR) program, developed by Canadian Department of National Defence, was designed to reduce the stigma of mental health and to increase resiliency in anticipation of improved help-seeking if needed. The program uses a mental health continuum model to teach people to look for signs and behavioural indicators in themselves and others, and to take appropriate actions when they appear. Colours designate levels of severity, bypassing diagnostic labels and the stigma attached with them. The positive impact of the program led the Canadian Mental Health Commission to remodel the program for police and first responders. (R2MR for First Responders)

The Working Mind (TWM) is an evidence-based program developed by the Mental Health Commission of Canada, designed to promote good mental health and reduce the stigma around mental illness in the workplace. (theworkingmind.ca/working-mind)

Opening Minds is an anti-stigma initiative of the Mental Health Commission of Canada, established in 2009, and using 'contact-based education as the central organising element across interventions and inclusive of a strong evaluation component to ensure ongoing improvement. Contact-based education occurs when people who have experienced mental illness share their personal story of recovery and hope. Key to the philosophy underpinning this program is to identify any existing programs that work and build on their strengths to extend reach nationally. (www.mentalhealthcommission.ca/English/opening-minds)

IMPROVING SOCIAL CONNECTEDNESS

These include general community as well as Veteran specific initiatives that build local links:

- Membership with the **Returned Soldiers League (RSL) / Royal Canadian Legion.**
- Attendance at the local **Veterans 'Men's Shed'.**
- Links to a community sporting club through **Veterans sporting organisations or community based supports**, see Veteransport.org.au/news/a-new-team-on-the-green/.
- Joining the local chapter of a **Veterans motorcycle club**.
- Veteran engagement with sport: **The Invictus Games.** The Invictus Games is an internationally known foundation that advertises the use of 'the power of sport to inspire recovery, support rehabilitation and generate a wider understanding and respect for wounded, injured and sick Servicemen and women throughout the world'.
- **Veteran Sport Australia.** In recognition of the power of sport to bring people together, Veteran Sport Australia, funded by the Returned Soldiers League New South Wales (RSL NSW) works with sports groups, ex-service organisations and Veteran and community groups to break down barriers to participation and open up new opportunities to Veterans and their families to get active by developing stronger connections with sporting involvement to both Veterans sporting groups and local community organisations.

5.3.3 Tier 1: Informal community supports (continued)

Certainty of the evidence)

High

IMPROVING SOCIAL CONNECTEDNESS

Evidence for the link between social connectedness and good health in the broader Evidence for the link between social connectedness and good health in the broader community is irrefutable (see Cruwys et al., 2013; Ding, Berry, & O'Brien, 2015; Saeri, Cruwys, Barlow, Stronge, & Sibley, 2018). Links have also been made between the reverse – loneliness/lack of perceived support and decreased wellbeing - particularly in the context of stressful life transitions (Praharso, Tear, & Cruwys, 2017; Seymour-Smith, Cruwys, Haslam, & Brodribb, 2017). Loneliness and social isolation have also been noted as problematic amongst Veterans (see Wilson, Hill, & Kiernan, 2018).

Evidence gathered from Veteran populations in the UK and US suggest that common reasons for Veterans feeling lonely and isolated include losing touch with comrades, physical or mental health issues and struggling to relate to civilians (Kuwert, Knaevelsrud, & Pietrzak, 2014; Royal British Legion, 2014). The support of peers has also been acknowledged positively by Veterans asked to evaluate interventions to curb loneliness and social isolation due to a shared sense of identity with other Veterans and as a link to community organisations (Burnell, Needs, & Gordon, 2017; Gould et al., 2017).

Moderate

BUILDING MENTAL HEALTH LITERACY AMONG VETERANS

Research continues to demonstrate that poor health literacy is related to numerous negative health and social outcomes, including but not limited to increased rates of chronic illness, decreased use of health services, increased health care costs and early mortality (Kutcher, Wei, & Coniglio, 2016). With that said, there is a notable lack of evidence to suggest that efforts to improve the mental health literacy of the general public and specialist groups including Veterans have had any positive impact (Mansfield, Patalay, & Humphrey, 2020). A primary concern is that the field of mental health literacy is still dominated by research from Western, developed countries and takes a predominantly mental-ill health approach (Mansfield et al., 2020). Further research is recommended in the area more generally with the aim of developing and validating measures that assess the ability to seek out, comprehend, appraise and apply information relating to the complete mental health state, including positive health states, as opposed to only assessing literacy of mental disorders (Kinderman, Read, Moncrieff, & Bentall, 2013; Kutcher et al., 2016; Mansfield et al., 2020).

5.3.3 Tier 1: Informal community supports (continued)

Certainty of the evidence

Moderate

REDUCING STIGMA

Road to Mental Readiness (R2MR): In their meta-analytic approach to evaluation of the R2MR program outcomes conducted at multiple sites, Szeto, Dobson & Knaak (2019) reported increased perceptions of resiliency and most importantly, decreased stigmatising attitudes maintained at short term follow up.

The Working Mind (TWM): In their meta-analysis of TWM, Dobson, Szeto and Knaak (2019) report that the program was associated with moderate reductions in stigma and increased self-reported resilience and coping across a number of settings (i.e., 8 replications of the program in numerous Canadian jurisdictions between December 2013 and May 2015). However, the evidence is reported as derived from observational and qualitative methodologies to date and therefore, is of mild-moderate quality.

Opening Minds: There is good evidence to support the use of contact based sessions (sessions with 'experts by experience') to reduce mental health stigma (Patten et al., 2012; Stuart et al., 2014). Evaluation of the program was restricted to observational and qualitative data. Interestingly, as noted in other evaluations of public health campaigns, positive outcomes from anti-stigma campaigns do erode relatively quickly indicating a need for ongoing investment if to achieve long standing reductions in attitudes to issues involving mental wellbeing and ill-health (Lindsay, Henderson, & Szeto, 2018).

5.3.4 Tier 2: Formal community supports and services (including GPs)

Overview

This tier is targeted at Veterans and their families with low level problems who require a little more than can be offered at Tier 1, but who are not appropriate for (or ready to access) higher levels of intervention.

The goal is to treat these mild psychosocial problems with simple, low intensity interventions in order to prevent a deterioration in mental health. Tier 2 introduces paid workers to the system. It may include, for example, paid peer support workers and non-specialist health care workers such as community health providers and low intensity drug/alcohol counselling services (all of whom need to have some training in Veteran-awareness).

Primary care doctors (GPs) will also have a role at this tier (as well as in Tier 3), since they are often the first point of contact for Veterans and their families. Tier 2 may also include low intensity treatment and support offered, for example, through internet therapy and other e-health initiatives, telephone support services (e.g., Veterans Line), or more formally established support groups. All of these initiatives in Tier 2 can be tailored either specifically, or as part of Veteran materials, for partners and children.

This tier is closely integrated with, and makes use of similar resources to Tier 1. The services are widely accessible and provide

Target populations / eligibility

Veterans or family members presenting with mild, high prevalence mental health problems arising from trauma exposure, typically uncomplicated in nature or in early phases of decline.

This group will report a mix of concerning levels of stress or reduced function but generally possess ample personal resources and social supports to benefit from a low intensity intervention.

Example Veteran being treated in this tier

A 30 year old former army Veteran working as a rigger on an ocean based oil platform on a two weeks on, two weeks off rotation, presented, with advice from of some of his Veteran colleagues, to a local Veteran friendly GP with complaints about progressively increasing difficulties with insomnia, irritability and anger.

The Veteran requests suggestions regarding medication to help get a decent night's sleep. He informs the GP he wants 'a little peace in the house' between himself and his wife.

Primary treatment role and treatment context

The primary treatment role at this tier is to provide timely, brief, low intensity intervention in line with evidence-based and evidence led therapies. To encourage engagement with support opportunities that will enhance recovery and guard against relapse.

Best and next practice interventions

Key interventions pitched at this tier are typically best labelled as primary care type interventions with broad reach to offer uncomplicated, low intensity interventions for high prevalence presentations, e.g., GP support and supervision, government, non-government and charity supported low intensity intervention.

Low intensity services minimise (or eliminate) specialist therapist contact time with service clients, focus on early intervention, self-help and skill development, may be delivered to individuals, groups, face-to-face (FTF) or by telephone or online (or in any combination), are low cost, and can be readily accessed via referral or self-referral and may include:

- Low intensity CBT
- On-line therapies and other e-health initiatives
- Self-help applications
- Bibliotherapy – provision of relevant reading materials
- Telephone support services
- Pharmacology – short term
- Single session or brief AOD treatments
- Established community and peer led support groups
- Low intensity peer-support, assuming peers have training in core competencies AND have boundaries and well supported in their role.

This group is also likely to benefit from Tier 1 interventions, particularly building social connections and a supportive social network.

FAMILY AND RELATIONSHIP INTERVENTIONS – LOW INTENSITY, PEER-LED

Enrolment in communication, carers or partners groups, with a peer-led approach to offering support and educative interventions aimed at improving knowledge and understanding between couples. This can be partner only or for couples and families.

5.3.4 Tier 2: Formal community supports and services (including GPs) (continued)

Specific examples of interventions

Examples of effective, low intensity interventions include:

- **Improving Access to Psychological Therapies (IAPT)** in the UK (www.england.nhs.uk/mental-health/adults/iapt/)
- **NewAccess** in Australia (individual treatment delivered by non-mental health professionals)
- **MindSpot** (Australian online clinic approach)
- **MoodGYM** (Australian online program for adolescents and adults)
- **The BRAVE Program** (Australian online program for children and adolescents).
- **Alcoholics Anonymous/Narcotics Anonymous (AA/NA)** – with a focus on seeking out more Veteran friendly meetings if available and preferred

In addition to these low intensity interventions the following are relevant for this tier:

Free annual Veteran Health Checks (www1.racgp.org.au/newsgp/clinical/take-action-to-stay-well-tailored-health-incentive). Understanding ADF Veterans are exposed to unique and, on occasions, highly stressful experiences during their careers, the Department of Veteran Affairs (DVA) in Australia has set up a programme supporting free annual health checks for all Veterans. The focus of the messaging is encouraging the Veteran to take responsibility for their health and get help early (i.e., early intervention) if a problem is identified. The hope is that there will be take up of the programme amongst both Veterans and primary care services.

Pro-Active, Recovery-oriented Treatment Navigation to engage racially diverse Veterans in mental health (PARTNER-MH). This is a 6-month, peer-led patient navigation program in VHA outpatient mental health clinics. The aims of PARTNER-MH are to (1) engage minority Veterans in VHA mental health services; (2) give Veterans the tools to become active collaborators in their care, and (3) improve their communication skills, including increasing participation in shared decision making.

Certainty of the evidence)

Moderate

High quality evidence is still to be secured for low intensity (LI) interventions, with a dearth of high quality research answering issues pertaining to:

i. the effectiveness of interventions, and

ii. moderating factors which influence successful implementation.

There is evidence supporting low intensity interventions for adults, particularly women and youth. The bulk of evidence refers to treatment of high prevalence conditions such as anxiety and depression, then alcohol and substance misuse, including dual diagnosis (Cuijpers et al., 2011; Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Ernst and Young, 2015; Haug, Nordgreen, Ost, & Havik, 2012; Mukuria et al., 2013; Zhou, Li, Pei, Gao, & Kong, 2016). There is little evidence to support use of these interventions for low prevalence conditions such as schizophrenia and psychosis. For alcohol and substance misuse, there is some evidence supporting brief interventions, group, computer-based and online approaches.

Encouraging evidence was found for LI interventions being effective and deliverable by non-mental health professionals in some cases, and as such, providing a cost-effective alternative to higher intensity therapies.

A few interventions have been more fully tested. The most impressive is the IAPT program from the UK, where trained paraprofessionals deliver LI CBT to people within a stepped-care framework. IAPT has well-structured training, supervision, assessments and mechanisms for stepping up the intensity of treatment and evaluation. IAPT was able to demonstrate great therapeutic outcomes after one year. Of the 19,395 patients treated, 40.3% showed reliable recovery and 63.7% showed reliable improvement (Gyani, Shafran, Layard, & Clark, 2013). Greater rates of recovery were found to be associated with greater adherence to the IAPT model and greater rates of step-up referrals when necessary. The cost benefits associated with increased recovery are likely to be gained through savings in physical healthcare, greater workforce productivity and improved quality of life (Layard & Clark, 2015).

In contrast, there is little evidence of efficacy for some population groups, particularly Aboriginal and Torres Strait Islanders and Culturally and Linguistically Diverse peoples.

Advice is that not all LI interventions will work for all consumers, a stepped-care framework is needed, with non-response requiring prompt identification and escalation to increased treatment intensity or type.

An important caveat is that programs such as IAPT may not translate as easily from the unitary National Health System of the UK to the fragmented providers – as is typical of the Veteran mental health system. Equally, evidence from the LI IAPT service is that an extensive training, supervision and monitoring framework underpins service fidelity and good patient outcomes BUT is reliant on considerable investment not available within many systems. That said, a qualitative investigation in IAPT LI services for Veterans reported enhanced acceptability and increased help-seeking in an adjusted LI service for Veterans (Farrand et al., 2018).

Certainty of the evidence)
Moderate
Mobile phone/tablet apps are another avenue for delivering LI mental health services. Reviews of these apps suggest that while there is a very large number of mental health apps available, the number that are based on evidence and evaluated apps is quite small. This burgeoning space has many possibilities, but needs to be navigated with care. The CBT-based app myCompass has been shown to be an effective tool for treating mild to moderate depression and anxiety. The main value of LI interventions in this context may be in providing an initial, non-confronting entry point into services. In terms of pharmacology, the best evidence suggests pharmacotherapy should not be used as a first option. See Veterans mates (https://www.Veteransmates.net.au/topic-49-therapeutic-brief). In terms of posttraumatic mental health peer support, Repper and Carter (2011) conducted a comprehensive review of peer-reviewed and grey literature on mental health peers within health organisations from 1995-2010 and concluded there was (i) no clear evidence to suggest there is any benefit of peers, and (ii) limited evidence on the benefit to the peer engaging in a peer role including in advancing their own recovery. Kent (2019) conducted an updated general review of the peer literature and concluded, as previous, that a lack of evidence still precludes strong recommendations from being made about the value of peers. In summary, the field of mental health peer support is a burgeoning one. Despite this, there is a lag between the increasing use of peer program and rigorous evaluation of the benefits.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services

Overview

The purpose of this tier is to provide more specialised treatment to Veterans and their families with moderate level problems.

Services at this level include primary care services (with at least some training in issues specific to Veteran mental health), as well as outpatient mental health services. Treatment provided at this tier should be consistent with evidence-based interventions for high prevalence disorders, including PTSD, depression, anxiety and substance use, albeit those of only moderate severity. Tier 3 would provide specialist assessment of new referrals and practitioners should be experienced with case formulation and treatment planning.

Services may be provided by a range of disciplines including GPs, nurse practitioners, psychiatrists, psychologists, social workers, family therapists and addiction counselors. Although not explicitly specialists in Veteran psychiatry, all need to have a thorough knowledge of Veteran mental health issues and needs. As noted in the “Tiered Model of Services and Supports” document, some of the Canadian OSI clinic services would be included in this tier.

Consideration needs to be given to the nature of services for partners and families at this level, as well as relationship counselling and family therapy services that include the Veteran in the process. There is no reason why they cannot be provided at the same facility in some cases, although an alternative option when appropriate is certainly desirable. This is of particular importance where verbal or physical domestic violence may be an issue in the relationship. When that is the case, of course, the first priority is one of safety.

As an underlying principle, the goal is to provide access to the best possible care and support for the Veteran and family. In some areas – and relationship counselling might be one – there are times when referral to an external specialist services will be the best option.

Target populations / eligibility

More highly prevalent, moderately severe, generic mental health problems arising from trauma exposure and including persistent problems or residual or relapsing conditions that warrant intervention. Individuals matched for services in this tier reach threshold criteria for diagnosis as determined by symptoms typically accompanied by at least mild-moderate impacts on function, quality of life and wellbeing.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Target populations / eligibility

Example Veteran being treated in this tier

A 27 year old Veteran recently diagnosed with PTSD, depression and gambling dependence reportedly linked to previous service as a submarine sailor presented to a community based addictions service requesting assistance with a gambling complaint.

The Veteran is receiving good treatment for his PTSD and depression managed by a psychiatrist and psychologist well known to Veteran services. The Veteran has undermined all efforts to curb online gambling and has descended into significant debt. The family car has been re-possessed and there are growing concerns about defaulting on the mortgage on the house. Bills have not been paid and food parcels are being delivered.

The Veteran's partner is ready to leave again, this time permanently, with their young son. The family have good social support but no ready access after moving to some distance away from friends and family. Based on previous experience, the Veteran is likely to deteriorate significantly in all facets of his mental health if the two separate.

Primary treatment role and treatment context

The primary treatment role at this tier is to offer timely and time limited intervention using evidence-based therapies, typically with a single problem focus, of moderate duration, and including broader consideration of treatment needs and interactions if indicated.

A single service provider may meet the needs of the Veteran and their family, though additional treatments and supports should be considered or might be conducted in parallel if augmenting treatment with intervention from within or from across tiers.

Assessment of the complexity of the treatment plan and individual resources is needed to determine whether system navigation could be managed by the individual and their supports or the principle service provider might assume these responsibilities temporarily.

Best and next practice interventions

Given the prevalence, high demand but moderate intensity of interventions at this tier level, treatment might be managed at the equivalent of a primary care service, within a more specialist non-government Veteran charity, or a secondary mental health service with lower thresholds for treatment inclusion. Opportunity to enhance or augment treatment should be considered from across tiers, particularly if incorporating a Veteran focus and the promise of a better quality recovery.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Best and next practice interventions

These services would be Veteran ‘friendly’ per preference, and would provide interventions for the signature mental health conditions of Veterans and their families including:

- PTSD, adjustment disorder, depression, anxiety disorder, insomnia, problem anger and one of the addictions. For all these disorders, psychotherapeutic interventions such as CBT and medications have traditionally been the mainstays of treatment and can be effective in improving symptoms, functional outcomes and quality of life. Evidence based treatments outlined below are also included in Tier 4.
- Assessment of and the offer of support or formal intervention for partners, carers and families should be investigated. When indicated relationship difficulties or family discord may be adequately served by short term, brief interventions
- Interventions with a broader focus on wellbeing including treatment offerings at lower tiers that offer individuals and/or their families significant benefits.

PTSD INTERVENTIONS - PSYCHOLOGICAL

There are five first-line psychological interventions (delivered in an individual setting) for adults with clinically relevant posttraumatic stress symptoms (Phoenix Australia Centre for Posttraumatic Mental Health, 2020):

Prolonged exposure (PE)

The key objective of exposure therapy is to help the person confront the object of their anxieties. A fundamental principle underlying the process of exposure is that of habituation, the notion that if people can be kept in contact with the anxiety-provoking stimulus for long enough, their anxiety will inevitably reduce. More contemporary models emphasise information processing as a key mechanism. Prolonged exposure is a manualised therapy consisting of psychoeducation about common reactions to trauma, breathing retraining, in vivo exposure (approaching safe situations that patients avoided due to trauma-related fear), imagery exposure (repeated recounting of trauma memories during sessions and listening to recordings of the recounting made during therapy sessions), and processing (discussion of thoughts and feelings related to the exposure exercises).

Cognitive processing therapy (CPT)

Cognitive processing therapy (CPT) is a form of cognitive therapy refined specifically for the treatment of PTSD. CPT is a 12-session cognitive-behavioural manualised treatment for PTSD that systematically addresses key posttraumatic themes, including safety, trust, power and control, self-esteem and intimacy. The primary goal of treatment is to create more balanced, adaptive, multifaceted trauma appraisals and beliefs. Treatment helps the person to identify unhelpful thoughts and beliefs (‘stuck points’), challenge them, and replace them with rational alternatives in an adaptation of standard cognitive therapy approaches. It has a smaller exposure component than imaginal exposure therapy (restricted to writing an account of the experience). It also helps to address associated problems such as depression, guilt, and anger.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Best and next practice interventions

Trauma-focused cognitive behaviour therapy (TF-CBT)

Trauma-focused cognitive behavioural therapy (TF-CBT), is a broad term that encompasses any treatment that employs the standard principles of CBT combined with some form of trauma processing. Generally, TF-CBT involves the integration of CBT principles with components of exposure therapy, including imaginal exposure and graded in vivo exposure.

The typical format of TF-CBT involves psychoeducation, breathing/relaxation training (arousal reduction strategies), imaginal exposure, in vivo exposure and cognitive restructuring.

Cognitive therapy (CT)

Cognitive therapy (CT) is a variant of trauma-focused CBT in which the therapist and patient collaboratively develop an individualised version of Ehlers and Clark's (2000) model of PTSD which serves as the framework for therapy. Ehlers and Clark suggest that PTSD becomes persistent when individuals process the trauma in a way that leads to a sense of serious, current threat. The sense of threat is hypothesised to arise as a consequence of excessively negative appraisals of the trauma and/or its sequelae, and a disturbance of the autobiographical memory for the trauma which leads to involuntary reexperiencing of aspects of the trauma. The problem is maintained by unhelpful behavioural and cognitive strategies that are intended to control the symptoms and perceived threat. Accordingly, CT for PTSD aims to modify excessively negative appraisals, correct the autobiographical memory disturbance and remove the problematic behavioural and cognitive strategies.

CT is generally administered for 12 weekly treatment sessions (of 90 minutes for the initial sessions, and 60 minutes for the following sessions).

Eye movement desensitization and reprocessing (EMDR)

EMDR is a standardised, eight-phase, trauma-focused therapy involving the use of bilateral physical stimulation (eye movements, taps, or tones). EMDR is based on the assumption that, during a traumatic event, overwhelming emotions or dissociative processes may interfere with information processing. This leads to the experience being stored in an 'unprocessed' way, disconnected from existing memory networks. In EMDR the person is asked to focus on the trauma-related imagery, and the associated thoughts, emotions and body sensations while bilateral physical stimulation, such as moving their eyes back and forth, occurs. Processing targets may involve past events, present triggers and adaptive future functioning. It is proposed that this dual attention facilitates the processing of the traumatic memory into existing knowledge networks, although the precise mechanism involved is not known.

Other short-term brief interventions:

Psychoeducation (Individual and/or family)

Brief therapy

Time limited and present oriented brief active and directive counselling aimed at addressing current symptoms. It is client strengths and solution focused.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Specific examples of interventions

SERVICES:

Medicare (Australia) - The Australian government offers subsidised psychiatric and psychological treatments to psychiatrists and psychotherapists with appropriate credentials. Services and individuals with expertise and experience in working with signature mental health conditions of Veterans and their families are often contracted to offer time limited, evidence-based treatments. These include psychotherapeutic interventions such as CBT or in some cases medication.

Open Arms (Australia) - Open Arms offers mental health and wellbeing support for current and ex-serving ADF personnel and their families. The service is supported by the Australian Department of Veteran Affairs. Counselling services are provided to any Veteran with a single day's service and their family for free. The service is Veteran focused and positively discriminates toward recruitment of staff who are Veterans themselves. Quality structures focusing on professional development and supervision support high fidelity to evidence-based treatments.

Relationships Australia – Relationships Australia offer a means based counselling service to couples with problems in their relationship, issues such as gambling, and other general wellbeing needs.

The Royal's Operational Stress Injury Clinic - A specialised outpatient program that serves Canadian Forces Veterans and current members. Family members of clients are also eligible to access services. The clinic offers comprehensive assessments of operational stress injuries (OSIs), evidence-based treatment with specialised individual, group and couple's therapy, as well as pharmacotherapy, and education to Veterans, military members, and their families. Therapy often includes a combination of medication and group or individual CBT. The OSI Clinic's comprehensive approach to recovery includes interventions aimed at improving readiness for treatment, symptom reduction and assistance with transitioning back into the community.

Member and Family Assistance services (Government of Canada, 2020)- The Member and Family Assistance services is a 24 hour, 7 days a week telephone and face to face counselling service that is voluntary, confidential, and available to CAF members and their families who have personal concerns that affect their wellbeing and/or work performance. All Regular Force members, Reserve Class members, Cadets, Rangers and their families can use this service to discuss a variety of concerns. This is a short-term problem-solving service. Often only a few sessions are required to resolve the problem. If long-term help or a more specialised service is needed, a referral to an appropriate professional resource can be made.

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Specific examples of interventions

INTERVENTIONS FOR PTSD:

- Cognitive processing therapy (CPT)
- Cognitive therapy (CT)
- Eye movement desensitization and reprocessing (EMDR)
- Prolonged exposure (PE)
- Trauma-focused CBT (TF-CBT)

INTERVENTIONS FOR VARIOUS MENTAL HEALTH CONDITIONS AND ADDICTIONS (E.G., GAMBLING):

- High intensity CBT
- Psycho-education
- Brief therapy

Certainty of the evidence

Strong

There is high certainty evidence of impact for the following interventions based on systematic reviews of RCTs and other studies and evaluations.

GENERAL INTERVENTIONS

High intensity CBT

PTSD INTERVENTIONS

For adults with clinically relevant posttraumatic stress symptoms, the following interventions have a strong recommendation for use (Phoenix Australia Centre for Posttraumatic Mental Health, 2020).

PSYCHOLOGICAL TREATMENTS (DELIVERED IN AN INDIVIDUAL SETTING)

- Cognitive processing therapy (CPT)
- Cognitive therapy (CT)
- Eye movement desensitization and reprocessing (EMDR)
- Prolonged exposure (PE)
- Trauma-focused CBT (TF-CBT)

5.3.5 Tier 3: Formal posttraumatic mental health services and social services (continued)

Certainty of the evidence

Moderate

- Psycho-education

As an early treatment component

Evidence is lacking, however clinical experience suggests that psycho-education is an essential early step in therapy (Creamer & Forbes, 2004) (i.e., part of another type of treatment, for example, trauma-focused CBT, virtual reality exposure therapy, CPT, present-centred therapy, written exposure therapy and PE)

As a stand-alone treatment, delivered via telehealth (no supportive evidence)

Telehealth-delivered psychoeducation has high completion rates (> 80%) (Niles et al., 2012), however it was inferior with respect to temporary symptom reductions to a brief mindfulness intervention (it had no impact on PTSD symptoms).

As a stand-alone treatment, delivered via mobile apps (some supportive evidence)

Apps that provide psycho-education about PTSD-related symptoms include PTSD Coach, PE Coach and LifeArmor. Preliminary results suggest that app use (i.e., PE Coach and LifeArmor) with or without specific direction, reduces symptom severity (Kuhn et al., 2017; Roy et al., 2017)

As a family/relationship option (supportive evidence)

REACH (Reaching out to Educate and Assist Caring, Healthy Families), an adaptation of the multifamily group psychoeducation program tailored for delivery to Veterans with PTSD and their family members lead to improved family functioning and symptom status for both Veterans and family members (Fischer, Sherman, Han, & Owen Jr, 2013)

A review of interventions for partners of Veterans with PTSD revealed that the most common feature of interventions was psychoeducation on topics such as communication, problem solving and emotion regulation. This is most often as an early treatment component used in the initial stabilisation phase of trauma-focused therapies (Turgoose & Murphy, 2019)

When compared to other first-line treatments (RCTs) it is inferior

When compared to a motivational enhancement intervention (to enhance motivation to engage in PTSD treatment) (Murphy, Thompson, Murray, Rainey, & Uddo, 2009) and PE to treat patients with SUD/PTSD (Norman et al., 2016), psychoeducation was inferior.

- Brief therapy

Single-session TF-CBT: some evidence but minimal in Veteran populations (Basoglu, Salcioglu, & Livanou, 2007; Başoğlu, Şalcıoğlu, Livanou, Kalender, & Acar, 2005; Sloan, Marx, Lee, & Resick, 2018).

5.3.6 Tier 4: Specialist posttraumatic mental health services

Overview

Tier 4 is designed for Veterans and their families whose problems are too severe to be managed at Tier 3, or who have failed to benefit from intervention at that level.

These are specialist Veteran mental health services with a high level of expertise and experience in treating more severe mental health problems. Services at this level may include inpatient and residential models, as well as intensive outpatient care, and treatment would be provided by psychiatrists, clinical psychologists and other specialists with the appropriate skills. A multidisciplinary team approach is recommended at this level. Pharmacotherapy is very likely to be a part of treatment model.

As noted in the "Tiered Model of Services and Supports" document, some of the higher intensity Canadian OSI clinic services would be included in this tier. Also included would be mental health specialists in the community with recognised expertise in Veterans mental health. Some form of accreditation is recommended for these providers to facilitate service providers at lower levels in the model making referrals for this level of specialist treatment.

Target populations / eligibility

More severe mental health problems and/or persistent residual or relapsing conditions arising from trauma exposure of increasing severity and complexity, with the individual typically reporting a number of comorbidities and socio-economic stressors, and stretched personal resources (i.e., 'at risk' of being overwhelmed or prone to being temporarily exhausted).

It is equally likely that individuals in this tier have a history of chronic challenges with symptoms and function matched by a significant history of poor response to treatment – partial or complete treatment resistance and persistent residual symptoms. They are likely to have multiple service providers, at different tiers, offering treatment and support.

A history of adverse childhood events and poor relationships including with treatment providers can add to the complexity of the presentation and challenges in providing treatment. Some family stress and relationship difficulties are not unusual. Equally, it isn't unusual for the individual to have few social supports and to be estranged from friends and family

It is not unusual for high levels of concern about acute, escalating risk to self or other in this group occasionally necessitating elevation to more intensive, higher tiered treatment.

Example Veteran being treated in this tier

A 62 year old Army Veteran, retired, with diagnoses of PTSD, depression and accumulating physical health complaints arising from 30 years of service with multiple deployments in high tempo operational roles presents to his Veteran mental health service with his partner seeking assistance for anger management and relationship counselling after his second wife informs she is going to leave him following an escalating history of repeated verbal attacks. She fears he may physically attack her if things continue.

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Target populations / eligibility (continued)

The Veteran is well known to the service and has a history of involvement with more acute, intensive inpatient and specialist PTSD mental health services as well as brief attempts to engage with mental health and wellbeing programmes offered by local ESOs. The Veteran has a history of sporadic binge drinking to excess that has been intricately linked to 4 assault convictions, the last incurring a 12 month jail term when involved in an altercation with a work colleague ten years prior.

The Veteran has no social supports and reports that he has been banned ‘indefinitely’ from the local Veterans’ service and the community sporting club. The Veteran has a history of commencing and dropping out of treatment and constantly complaining about and then sacking psychiatrists and psychologists. He has completed guideline recommended treatment for PTSD and has had a number of episodes of care for depression.

The Veteran is seen regularly by a local psychiatrist who prescribes a raft of medications that the Veteran is prone to adjust as he sees fit. The Veteran has ongoing appointments at a pain clinic but, by his own admission, is non-compliant with all suggestions to improve his physical health.

The Veteran reports that he has made two previous attempts to get 1:1 psychological therapy for this anger and attended “half” of a group programme. He admitted to sacking a series of individual counsellors and abandoning a number of anger group programmes, particularly any that did not focus on Veterans. The Veteran reported having few friends, none of whom are “civilians”. He is divorced from his first wife of 15 years and has not had contact with his two adult children for over 10 years.

Primary treatment role and treatment context

The primary treatment role at this tier is to offer high fidelity, evidence-based intervention, potentially in group or individual form, within a Veteran context wherever tenable, tailored to the signature mental health conditions of Veterans and their families and delivered by qualified clinicians with experience and expertise in offering culturally appropriate interventions.

Mental health concerns of this level of severity typically benefit from pharmacology and cross tier interventions including escalation to more intensive tiers. Intervention may incorporate brief periods of intensive inpatient treatment AND input to the individual and family/carers in the form of formal and informal support at lower tiers.

With the increasing complexity of care provided at this tier, the Veteran is likely to benefit from extended treatment, sequenced appropriately to manage comorbidity, and the appointment of a professional with responsibility for coordination of the treatment ‘package’, i.e., care coordination.

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Primary treatment role and treatment context (continued)

Initiatives to improve wellbeing, function and quality of life, offered at lower tiers, can be overlooked or overshadowed by the severity of symptoms but are valuable additional inputs for Veterans and their families as ongoing incremental improvements in the quality of recovery becomes more commonly the focus for individuals dealing with more long term, chronic conditions.

Equally, chronic levels of risk to self or other are common with individuals with mental health and wellbeing challenges at this level and can be an equally concerning issue for partners and families. Risk therefore warrants ongoing monitoring, coordination of services is key and within and between tier communication between services and clinicians is of paramount importance.

Best and next practice interventions

Key interventions at this tier are typically offered through Veteran specific services via outpatient individual, group or perhaps day programs.

The target for interventions are for complex signature mental health presentations of Veterans and family members, but typically delivered in more intensive formats. Comorbidity is common and typically leads to increased complexity, compromised stability and a tenuous progress in recovery efforts. Severity in presentation is matched by the sophistication and complexity of treatment plans that are long term and bridge multiple tiers of treatment.

PTSD INTERVENTIONS – PSYCHOLOGICAL (DESCRIBED IN FULL UNDER TIER 3)

There are five first-line psychological interventions (delivered in an individual setting) for adults with clinically relevant posttraumatic stress symptoms (Phoenix Australia Centre for Posttraumatic Mental Health, 2020):

- Prolonged exposure (PE)
- Cognitive processing therapy (CPT)
- Trauma-focused cognitive behaviour therapy (TF-CBT)
- Cognitive therapy (CT)
- Eye movement desensitization and reprocessing (EMDR)

PTSD INTERVENTIONS - PHARMACOLOGICAL

While not first-line recommendations in the Australian context, pharmacological interventions which have a moderate level of evidence include:

- Selective serotonin reuptake inhibitors (SSRIs), e.g., fluoxetine, paroxetine, and sertraline
- Serotonin and noradrenaline reuptake inhibitors (SNRIs), e.g., venlafaxine

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Best and next practice interventions (continued)

PTSD INTERVENTIONS – NON-PSYCHOLOGICAL AND NON-PHARMACOLOGICAL

There is weak but encouraging evidence for augmenting first-line PTSD interventions with approaches such as exercise, repetitive transcranial magnetic stimulation (rTMS), acupuncture, cognitive restructuring and hydrocortisone. A recent review of augmented PTSD interventions identified 28 augmentation approaches which targeted eight intervention mechanisms (Metcalf et al., 2020). The eight mechanisms were (1) global cognitive enhancement (e.g., rTMS), (2) specific cognitive enhancement (e.g., cognitive restructuring), (3) emotional distress reduction (e.g., emotion regulation training), (4) fear extinction (e.g., d-cycloserine), (5) first-line combinations, (6) pharmaco-polytherapy, (7) sleep improvement (imagery rehearsal therapy), and (8) social rehabilitiation (e.g., trauma management therapy). The review concluded that only the augmentation approaches targeting global cognitive enhancement showed promise. Conversely, approaches were ineffective if they targeted a mechanism similar to the first-line intervention, combined two first-line interventions, or were pharmacological interventions targeting fear extinction.

CASE MANAGEMENT/ COORDINATED CARE

Case management is a helpful intervention for Veterans and their families offered treatments of this tier to ensure optimal coordination of services and treatments.

Coordinated (collaborative) care will assist in the formulation of new treatment plans mindful of treatment sequencing in the presence of significant comorbidity and whether to seek alternatives, to augment or to extend treatments when response is slowed, partial or non-existent as is often necessary for Veterans seeking treatment of the quality offered in this tier or above.

Collaborative chronic care models use interdisciplinary teams of health care professionals to coordinate care. In addition to improving teamwork and care processes, collaborative models also aim to help patients take a more active role in their care (US Department of Veterans' Affairs, 2019). Elements of collaborative care models include: work role redesign to support anticipatory, continuous care, self-management support, clinician decision support, clinical information systems, linkage to community resources and leadership support. These elements are flexibly implemented according to local needs, capabilities and priorities (Bauer et al., 2019).

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Best and next practice interventions (continued)

CASE MANAGEMENT/ COORDINATED CARE

Case management is a helpful intervention for Veterans and their families offered treatments of this tier to ensure optimal coordination of services and treatments.

Coordinated (collaborative) care will assist in the formulation of new treatment plans mindful of treatment sequencing in the presence of significant comorbidity and whether to seek alternatives, to augment or to extend treatments when response is slowed, partial or non-existent as is often necessary for Veterans seeking treatment of the quality offered in this tier or above.

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MANAGING COMORBIDITY

Concurrent treatment (also known as integrated treatment) is one of four approaches to treating comorbid disorders. The other three approaches are sequential (treatment of one disorder, then the other), parallel (treatment of each disorder, but in separate treatments) and single diagnosis (treatment of just one disorder, which may have an impact on comorbid conditions even if not originally designed for them) (Najavits et al., 2009). Where comorbidity is present, practitioners should refer to the relevant treatment guidelines for the treatment of each disorder (Phoenix Australia Centre for Posttraumatic Mental Health, 2020). In the case of PTSD, there is evidence in support of concurrent treatment of PTSD and substance use disorder (van Dam, Vedel, Ehring, & Emmelkamp, 2012), and treating PTSD to improve both PTSD and comorbid depression (Adams et al., 2019; Richardson, Fikretoglu, Liu, & McIntosh, 2011b).

FAMILY AND CARER INTERVENTIONS

While there are a number of intervention protocols directed specifically to military families, these are generally at Tier 3 or below, however there have been recent efforts to embed standard evidence-based treatments within a family context. Ridings et al. (2019) describe a family based protocol for TF-CBT, aimed at treating children. In addition to the standard TF-CBT protocol, a parenting/family skills-based component is embedded. This draws on elements of behavioural/skills based family therapies, of which there are a number of accepted protocols. Although there is evidence of successful adaptations of TF-CBT among diverse populations, there is not yet evidence for the military family context specifically (Ridings et al., 2019).

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Specific examples of interventions

PTSD INTERVENTIONS - PSYCHOLOGICAL

(Phoenix Australia Centre for Posttraumatic Mental Health, 2020)

- Prolonged exposure (PE)
- Cognitive processing therapy (CPT)
- Trauma-focused cognitive behaviour therapy (TF-CBT)
- Cognitive therapy (CT)
- Eye movement desensitization and reprocessing (EMDR)

PTSD INTERVENTIONS - PHARMACOLOGICAL

- Selective serotonin reuptake inhibitors (SSRIs), e.g., fluoxetine, paroxetine, sertraline.
- Serotonin and noradrenaline reuptake inhibitors (SNRIs), e.g., venlafaxine.

CASE MANAGEMENT/ CO-ORDINATED CARE

Collaborative care for Mental Health at the US Department of Veterans Affairs (VA) (US Department of Veterans' Affairs, 2019). The VA recently implemented a collaborative care model to treat mental health at 30 VA medical centres. An evaluation of the model using a randomised controlled trial (N=5,596) revealed improvements in mental health assessments in patients with comorbid conditions, and lower rates of mental health hospitalisations (Bauer et al., 2019).

MANAGING COMORBIDITY

Comorbid PTSD and depression

- Centrally Assisted Collaborative Telecare (CACT) (Engel et al., 2016): incorporates cognitive behavioural therapy (CBT) and pharmacotherapy to target PTSD and depression.
- Cognitive Behavioural Social Rhythm Therapy (CBSRT) (Haynes et al., 2016): a group therapy targeting PTSD, major depressive disorder (MDD) and sleep disturbances in Veterans.
- Vets Prevail (Hobfoll, Blais, Stevens, Walt, & Gengler, 2016): an online CBT intervention for PTSD and depression.

Comorbid PTSD and substance abuse

- For individuals experiencing comorbid PTSD and substance use disorder (SUD), separate ('sequential') treatment approaches are complicated by the reciprocal effects of the two conditions on each other, indicating that integrated treatment approaches might be preferable. Typically, sequential treatment has been the standard of care for comorbid PTSD and substance use, with substance use being addressed first, followed by targeted treatment of PTSD.

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Specific examples of interventions (continued)

Comorbid PTSD and substance abuse (continued)

- Concurrent Treatment of PTSD and Substance Use Disorders using Prolonged Exposure (COPE) (Back et al., 2015): a manual-based form of trauma-focused CBT with prolonged exposure to concurrently address PTSD and SUD.
- Thinking Forward (Acosta et al., 2017): a 12-week CBT-based online intervention targeting comorbid PTSD and hazardous substance use.
- Home telehealth care management program for PTSD (Battaglia et al., 2016), supplemented with a motivational interviewing-based smoking cessation component.
- A combined CBT and pharmacological (N-acetylcysteine) intervention targeting co-occurring PTSD and SUD (Back et al., 2016).

Comorbid PTSD and pain

- Integrated Management of Pain and PTSD in Returning OEF/OIF/OND Veterans (IMPROVE) (Plagge, Lu, Lovejoy, Karl, & Dobscha, 2013): an intervention utilising behavioural activation and collaborative care.
- Accelerated Resolution Therapy (ART) (Kip et al., 2014): an exposure therapy comprising imaginal exposure, imagery rescripting and bilateral eye movement.

FAMILY AND CARER INTERVENTION

Open Arms – As outlined in the previous tier, Open Arms offers mental health and wellbeing support for current and ex-serving ADF personnel and their families. The service is supported by the Australian Department of Veteran Affairs, the Federal Government. Counselling services are provided to any Veteran with a single day's service and their family for free. The service is Veteran focused and positively discriminates toward recruitment of staff who are Veterans themselves. Quality structures focusing on professional development and supervision support high fidelity to evidence-based treatments.

Veteran Specialist Services - Local, district or state supported, charity driven or a private enterprise. Specialist service and individual providers with experience and expertise in areas of Veteran mental health.

The following list highlights manualised programs for supporting Veterans and their families (Sherman & Larsen, 2018):

- FOCUS (Families OverComing Under Stress) Family Resilience Training.
- ADAPT: After Deployment: Adaptive Parenting Tools.
- American Red Cross military family classes.
- Couples therapy models for PTSD such as Cognitive-Behavioral Conjoint Therapy for PTSD and Structured Approach Therapy.

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Specific examples of interventions (continued)

FAMILY AND CARER INTERVENTION (CONTINUED)

- Support and Family Education (SAFE) Program - an 18-session curriculum to support adults who care for a Veteran living with chronic mental illness or PTSD.
- Operation Enduring Families (OEF) - an extension of the SAFE program, is a 5-session family education and support program for Veterans who have recently returned from a combat from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF).
- Reaching Out to Educate and Assist Healthy, Caring Families (REACH) Program.
- NAMI's Project Homefront.
- The TBI Family Caregiver Curriculum, was developed by the Department of Defense to help families of a Veteran returning from combat in OEF or OIF with a traumatic brain injury (TBI) www.dvbic.org/Families---Friends/Family-Caregiver-Curriculum.aspx.

Certainty of the evidence

Strong

PTSD INTERVENTIONS

For adults with clinically relevant posttraumatic stress symptoms, the following interventions have a strong recommendation for use (Phoenix Australia Centre for Posttraumatic Mental Health, 2020).

PSYCHOLOGICAL TREATMENTS (DELIVERED IN AN INDIVIDUAL SETTING)

- Cognitive processing therapy (CPT)
- Cognitive therapy (CT)

No Veteran specific evidence, but evidence in terrorism and civil conflict context and MVA survivors

- Eye movement desensitization and reprocessing (EMDR)
- Prolonged exposure (PE)

No studies with Veteran samples, but some samples included combat-related PTSD and terrorist affected people

- Trauma-focused CBT (TF-CBT)

COLLABORATIVE CARE MODELS

- Collaborative chronic care models (CCMs) have extensive randomised clinical trial evidence for effectiveness in serious mental illnesses (Bauer et al., 2019); see also Miller et al. (2013) and CCMHI (Canadian Collaborative Mental Health Initiative, 2006)

5.3.6 Tier 4: Specialist posttraumatic mental health services (continued)

Certainty of the evidence (continued)

Moderate

For adults with clinically relevant posttraumatic stress symptoms, the following interventions have a conditional recommendation for use (Phoenix Australia Centre for Posttraumatic Mental Health, 2020):

PSYCHOLOGICAL INTERVENTIONS (DELIVERED IN AN INDIVIDUAL SETTING)

- Narrative exposure therapy (NET)

No Veteran evidence; mainly disaster, asylum seekers and refugees, post-conflict.

- Present-centred therapy (PCT)
- Stress inoculation training (SIT)

No Veteran evidence. Primarily rape victims and female sexual assault samples.

PSYCHOLOGICAL INTERVENTIONS (DELIVERED IN A GROUP SETTING)

- Trauma-focused CBT (group)

PSYCHOLOGICAL INTERVENTIONS (INTERNET-DELIVERED)

- Guided internet-based trauma-focused CBT

PHARMACOLOGICAL INTERVENTIONS

- Selective serotonin reuptake inhibitors (SSRIs)
- Venlafaxine

No Veteran-specific samples, but some studies had a percentage of Veterans in their samples (Canadian Agency for Drugs and Technologies in Health (CADTH), 2015; Katzman et al., 2014; Phoenix Australia Centre for Posttraumatic Mental Health, 2020).

Low

For adults with clinically relevant posttraumatic stress symptoms, the following interventions have weak evidence and require further research (Phoenix Australia Centre for Posttraumatic Mental Health, 2020):

PSYCHOLOGICAL INTERVENTIONS

- Couples trauma-focused CBT
- Group and individual (combined) trauma-focused CBT

No Veteran evidence, childhood sexual abuse only.

- Meta-cognitive therapy

No Veteran evidence.

Certainty of the evidence (continued)

Low

PSYCHOLOGICAL INTERVENTIONS (CONTINUED)

- Non-trauma-focused CBT (affect regulation)
- Reconsolidation of traumatic memories (RTM)
- Single-session trauma-focused CBT

Limited Veteran evidence

- Virtual reality therapy (VRT)
- Written exposure therapy (WET)

PHARMACOLOGICAL INTERVENTIONS

- Ketamine
- Quetiapine

NON-PSYCHOLOGICAL AND NON-PHARMACOLOGICAL INTERVENTIONS

- Acupuncture

No Veteran evidence

- Mindfulness-based stress reduction (MBSR)
- Neurofeedback
- Physical exercise
- Repetitive transcranial magnetic stimulation (rTMS)
- Transcendental Meditation (TM)
- Yoga

5.3.7 Tier 5: Highly intensive posttraumatic mental health services

Overview

Tier five is highly resource intensive, designed to address the needs of the relatively few people with the most severe problems.

These are complex clinical cases, routinely chronic with high levels of comorbidity and often a history of harm to self or others. Most of these services would be provided in inpatient settings, at least for a period, although transition to intensive outpatient work is recommended as soon as reasonably possible. Where an inpatient stay is not required, the person may be managed with intensive case management, i.e., contact daily or, at least, most days.

Psychological and pharmacological interventions would be provided intensively by specialised clinicians working as a multidisciplinary team. A step down to Tier 4 when the person is sufficiently stable is appropriate, although it should be recognised that – even with the best possible care – some Veterans will fluctuate between Tiers 4 and 5 for an extended period.

Ideally the best services available at this level for partners and children should be provided within the Veterans' mental health service system. However, given the highly specialist nature of this work it may be that some of the child and family services required at this level of intensity would be better suited to treatment within the civilian service sector.

Target populations / eligibility

Veterans treated at this level will typically present with complex mental health challenges and accompanying relationship and family issues (if relationships and the family are still intact). These Veterans are commonly either experiencing severe symptoms warranting immediate treatment and relief or plagued by chronic, unremitting symptoms partially responsive to treatment deemed unresponsive to treatments of lower intensity offered at lower tiers. Treatments will typically involve greater numbers of sessions offered intensively or over a longer term by better trained and more experienced practitioners. Engagement can be problematic, vacillating between tenuous and overly-dependent.

This group is typically burdened by severe symptoms, high levels of comorbidity and significantly compromised function. There is commonly additional evidence of a high level of socio-economic stressors, low levels of social support and little involvement from significant others. These Veterans and their families/carers are persistently at risk of being overwhelmed.

Risk to self or other is a chronic, relevant issues typically of greater significance than evident at lower levels and equally, warranting continuous monitoring.

5.3.7 Tier 5: Highly intensive posttraumatic mental health services (continued)

Target populations / eligibility (continued)

Example Veteran being treated in this tier

A 50 year old Army Veteran with a 21 year service history who discharged by request 3 years prior presented with PTSD, comorbid major depression and a 15 year history of alcohol dependence and addiction to prescription medication prescribed for severe pain from hip, knee and lower back problems.

He is employed as a contract security guard/night watchman, but on extended leave after he was caught intoxicated and asleep in the workplace. He is estranged from family, isolated with no family support. He has a history of approaching and dropping out of treatment for over two years with little progress. He is yet to receive evidence-based PTSD treatment due to chronic intoxication. He participates in high risk behaviour (e.g., drink driving++) and has lost his license as a result.

He has persistent suicidal ideation and impulsive thoughts, though denies plan or intent to harm himself when sober. He reported that he is too angry to engage with the process of seeking assistance through the Department of Veteran Affairs which challenges attempts to secure treatment.

The clinical team to whom he has been referred are considering a complex intervention including inpatient alcohol withdrawal and short term inpatient rehabilitation with pain consult and medication review. Thereafter, a focus on stabilisation in an alcohol rehabilitation unit and consideration of direct referral into an evidence-based, inpatient PTSD program.

Primary treatment role and treatment context

The primary treatment role at this tier is to address the most severe and most complex presentations in the community typically requiring multi-professional, multi-disciplinary, multi-service involvement including ready access and a robust working relationship with services offered at higher tiers, i.e., respite and inpatient services. Veterans and Veteran family members needing intense interventions at this level will benefit from support packages offered at lower tiers. Assertive case management is not unusual, nor are interventions that high levels of psycho-social support, e.g., supported accommodation, financial advice and support.

Some of these services are offered as day or in inpatient settings. Given the need to ensure intervention generalises into the Veterans home and community and mitigates against dependency (and acknowledging the expense of such programs), these are typically delivered as short intensive interventions.

5.3.7 Tier 5: Highly intensive posttraumatic mental health services (continued)

Best and next practice interventions

Veteran specific services offering highly specialist care through expert clinicians with significant experience and training in a number of contexts including individual, group, day and live-in, inpatient formats. Staff in these services would typically be recognised authorities in the delivery of current, evidence-based treatments with the highest fidelity.

Comorbidity, chronicity and complexity - Treatments of complex PTSD, comorbidity and chronicity necessitate significant expertise in the delivery of interventions beyond recommendations for PTSD alone.

Expertise in the delivery of family and carer interventions - Expertise in this treatment group extends to knowledge of evidence-based treatments for relationships and families requesting assistance arising and extended from posttraumatic mental health concerns of a partner or parent.

Specific examples of interventions

Trauma Recovery Programs (Australia) (TRP) and Combat Stress UK Intensive Treatment Program (ITP). Both are accredited PTSD treatment programs offered as intensive day or inpatient programs, typically over the course of 4-12 weeks with follow up, in a mixed format of group and individual therapy, addressing PTSD and associated features via guideline recommended interventions and augmented with a focus on wellbeing (e.g., exercise and meaningful activity). Both programs are at least part funded by the Australian Department of Veterans' Affairs (DVA) and the UK National Health Service respectively.

Certainty of the evidence

Moderate

There is moderate certainty to the evidence to support the use of intensive mental health services and supports for Veteran populations – empirical research examining treatment outcomes for Australian-based treatment recovery programs (TRP) and UK-based Intensive Treatment Programs (ITP):

1. TRP: Australian-based TRP programs comprise 20-30 treatment days over a 3-month period, during which patients receive a combination of individual and group therapy. The program guidelines specify: (a) psychoeducation, (b) symptom management, (c) trauma focused therapy, (d) graded in vivo exposure, (e) substance abuse issues, (f) interpersonal skills, (g) physical health and lifestyle issues, (h) relapse prevention, and (i) individual therapy.
2. ITP: UK-Based ITPs comprise a 6-week intensive treatment residential programme offered by Combat Stress (a charity supporting Veteran mental health). The ITP consists of individual trauma focused-CBT and groups scheduled on weekdays from 9:00 to 17:00 that are standardised and manualised to ensure a homogenous treatment experience. Individuals are assigned to a closed group of eight and are offered a minimum of 15 individual TF-CBT therapy sessions (lasting 90 min) and 55 group sessions each lasting 1 hour.

Certainty of the evidence) (continued)

Moderate

Research conducted by Phelps et al. (2018) explored different trajectories of treatment responses in Australian military Veterans with PTSD, who participated in an accredited PTSD outpatient TRP. Findings of this study demonstrated a range of different response patterns over time (intake, discharge, 3 months post-discharge and 9-months post-discharge), all demonstrating reductions of different degrees across time. Importantly, many of these trajectories (comprising ~70% of the sample) demonstrated large reductions in PTSD.

In a separate study, Phelps et al. (2018) also examined trajectories of change in PTSD symptom clusters across a sample of Australian military Veterans with PTSD who participated in the Australia-based TRP. Using repeated measures effect sizes, they found significant reductions over time across all symptom clusters including arousal, numbing, avoidance and intrusions. Specifically, the largest effects were observed for arousal and numbing between intake and post-treatment, while more modest reductions were observed for avoidance and intrusions. The intrusions symptom cluster also demonstrated a small effect which showed continued improvements from 3-months to 9-months post-treatment.

Similarly, Murphy et al. (2015) examined mental health and functional impairment outcomes 6 months following a 6-week intensive treatment program (ITP; offered by Combat Stress) in UK military Veterans with a diagnosis of PTSD. Findings of the study revealed the greatest improvements in PTSD symptoms and reduced functional impairment 6 months after completing treatment. In addition to this, the treatment also generated noteworthy, albeit more modest, improvements on other mental health outcomes including symptoms of depression, anxiety and anger.

Together these empirical research studies demonstrate consistent findings and illustrate how intensive mental health services for Veterans can be useful and effective for treating psychological challenges faced by this population. Such findings can be bolstered with continued efforts, and further research examining treatment effects Veterans enrolled in TRPs and IPTs, to develop a larger evidence-base for intensive mental health services.

5.3.8 Acute / crisis care (accessible for all tiers)

Overview

This is not strictly a level of its own within the stepped care model but, rather, is available across all the other levels. It is essential that an easily accessible acute assessment and triage service exists for Veterans and their families with sudden exacerbations in need.

These acute episodes may occur in the context of mild, moderate or severe underling problems, but it would generally be assumed that the person is currently not closely linked in with a specialist service to whom he/she can turn in times of crisis. Such scenarios are not uncommon in the Veteran community and may be triggered by a range of life stressors such as relationship conflict, financial or employment problems, and substance abuse. Ideally, Tier 1 or 2 services (e.g., peer supporters) will swing into action at these times but they will usually require a specialist to whom they can turn for expert opinion and acute care.

The acute assessment service would, ideally, be available at all times to assess the person and to arrange whatever level of care is indicated (wherever possible, of course, opting for the least intensive level required to meet the need). While sometimes a referral back to the peer group or community provider might be sufficient, the team needs to have access to acute admissions where there is a clear risk to the self or others.

Target population(s) / eligibility

High level of risk to self or other often involving compromised mental state marked by disinhibition and impulsivity coupled with few social supports and few resources.

Example Veteran being treated in this tier

A 28 year old single, unemployed, Afghanistan, Iraq and East Timor Veteran who medically discharged and transitioned out of the Army two years previous, diagnosed with PTSD, depression, and poly-substance dependence. He has been homeless and living in his car for the previous 6 months.

He was escorted to accident and emergency by police after they found him uncommunicative and grossly intoxicated in his car in a nearby park. It was unclear whether it was a deliberate or accidental overdose. He has had 2 previous overdoses in the previous 6 months, with no success in previously engaging in community services and no family involvement. He was detained for assessment and stabilisation.

Primary treatment role and treatment context

The primary treatment role is to offer sanctuary and containment with the opportunity to stabilise mental state and support improvements in perceived sense of control and agency within the Veteran, while establishing or re-establishing and supporting the carer or family or any professional support networks.

5.3.8 Acute / crisis care (accessible for all tiers) (continued)

Best and next practice interventions
Intensive care – acute inpatient admission offered in 24 hour, seven day facility and staffed by a highly qualified, multi-disciplinary team. In rural and remote areas, dedicated Veteran services with 24 hour crisis lines (Open Arms), or community based crisis lines such as Lifeline and the Suicide Call Back Service may be the first line of support, and direct to appropriate services.
Specific examples of interventions
Two examples of mental health units who typically fulfil this function include Veteran specific/ only mental health units with facility for detaining Veterans involuntarily under the mental health care act or local area mental health units.

5.4 Optimum use of the stepped / matched model: Case examples

The following illustrative case examples seek to bring the stepped / matched model to life and demonstrate how the model will effectively support a Veteran with PTSD.

5.4.1 Case example 1: Greg A.

5.4.1.1 INTAKE AND ASSESSMENT (FIRST PRESENTATION)

Greg, a 27 year old, married, self-employed Veteran who transitioned out of the Army 18 months prior, attends a GP recommended by fellow Veterans from the area as ‘Veteran friendly’. They inform him, “he’ll know where you are coming from and get you what you need”.

At that appointment Greg confirmed he is an Army Veteran, held a role in the infantry, and transitioned out 9 months prior after serving for 7 years. When invited into the consultation and asked to explain why he had come, Greg informed the GP he felt completely overwhelmed. He stated that he felt he was failing in all the roles he had - as an employee, friend, husband and father - and that he was increasingly struggling to see life as worth living. He stated that he was aware he had ‘issues’ for a while but did not seek help immediately, hoping things would improve. He also believed others around him had had enough.

His wife had told him to get help or he would need to leave the home and he shamefully noted that his two young boys, aged 4 and 2, were avoiding him. He stated that he had been often angry and without work, his consumption of alcohol was increasing, saying he had “probably” already over-indulged.

Greg informed the GP he had been sitting in his shed alone most days drinking late into the night. Greg stated that sleep was a problem for him because he felt on edge and his thinking sped up rather than slowed at night. He thought he might have been averaging 3-4 hours of sleep per night, waking early then not being able to get back to sleep. Greg stated some consistently low level pain in the shoulder he had previously injured in the army seemed worse at night and was becoming an increasing problem. Greg reported that he had stopped talking to family and meeting with friends and generally avoiding all contact over the last 3-6 months. He explained that he was not finding meeting with others enjoyable, got too worked up and was prone to drink too much and “get into trouble”. Greg stated that most of his friends were Veterans and had been trying to contact him. Many had been telling him to go and get help.

Greg stated that he has had problems with finding good work since leaving the Army. Before discharge Greg earned a higher class driver’s license allowing him to drive large trucks and operate heavy machinery but had only been able to secure contract work. He was on his third contract and recently told his services would no longer be needed. Greg said he felt he didn’t have much in common with civilians and was continually challenging work mates and managers about “standards”. Greg stated that he had been intoxicated since losing his job and felt despondent about trying to look for more work without any references.

As the GP sought further background information, Greg informed him that he had been deployed on 3 occasions in his time in the Army and felt he coped relatively well until his last tour of Afghanistan. Greg stated that he had been medically downgraded for about 12 months with a mixture of knee and shoulder complaints needing minor surgery and low mood. Greg stated he did not “settle down very well after the last deployment”. While medically downgraded, Greg stated that he lost his enthusiasm for infantry and soldiering and applied for a CORP change in the hope of gaining a trade. When his transfer request failed Greg began planning his discharge.

Greg reported that he married young at age 22. Twelve months later they had their first child. His wife, he reported, was from a ‘Defence family’ and had been posted and re-posted with him without fuss. She had trained as a nurse and was quickly able to get work wherever they were and build up a network of friends. At discharge they returned to her home town and family who continued to offer good support with childcare in particular. Greg stated there had been some problems with the marriage in the last year and the two rarely spent time together. Greg stated arguments had increased and voices raised but there had not been any violence. He informed that he preferred to withdraw and drink.

With regards the rest of the family, Greg stated that his youngest son had been thought to have an ‘immature bowel’ and was chronically unsettled and a poor sleeper. They currently lived in their own home with a small mortgage as Greg had invested money from his deployments well. They were currently able to pay bills from her wage and used savings for extra things, though Greg was aware he would need to find a career of some nature to support the family going forward. Greg’s own family were dotted around the country, none of whom were close. His upbringing had been difficult and he had joined the Army as he could see good opportunities to make a change and get a career.

The GP and Greg agreed he would not drink that night and Greg would return the following day with his wife to discuss a treatment plan. The GP prescribed a single dose of sleeping medication for the evening.

5.4.1.2 TREATMENT PLANNING AND TREATMENT

At the meeting the following day the GP agreed to work with the couple to coordinate a staged approach to treatment to include the following across a stepped / matched model:

Treatment / Progression	Interventions (Tier alignment)
Intake and assessment (initial consultation)	Complete – GP (Tier 2)
Stage One	Referral to a psychiatrist for assessment of mental health and recommendations regarding treatment. (Tier 3-4) Referral to orthopaedic surgeon to review shoulder pain. (Tier 3-4) GP led intervention for alcohol reduction Psychoeducation about consumption, goal setting, diary keeping, identification of relapse risks. (Tier 2) Consider medication to reduce withdrawals, if indicated. (Tier 2) Consider medication to reduce alcohol cravings (Tier 2) Consider Veteran Peer Led AA group (Tier 1)
Stage Two	**Pending results from Stage One, to consider:** GP (Tier 2) to follow recommendations by psychiatrist (Tier 3) and orthopaedic surgeon (Tier 3) regarding management of mental health and pain, to work with both (Tier 2-3) or to hand care to one specialist to manage (Tiers 3-4-5 as managed by specialists). Review alcohol consumption and step up (referral to specialist A&D - Tiers 3-5), maintain (GP and/or AA – Tier 1 & 2) or step down (nil/peer led alcohol group (Tier 1)) intervention as indicated. Referral to welfare officers to support applications to the Department of Veteran Affairs for consideration of claim (Tier 1). Consider request for Veteran peer support to provide assistance with ‘system navigation’ dependent on resources, familiarity, confidence and support for Greg within his own social network. Referral to psychologist/sleep specialist (Tier 3) or a ‘sleep clinic’ (Tier 3-4) for assessment and treatment of insomnia (Tier 2). Referral to ‘Veteran friendly’ psychologist/service with evidence-based group (Tier 1-2) or individual treatment of anger (Tier 2-3). Consider wife attending a peer led partner’s support group run through local ex-service organisation (Tier 1-2) or couple consider relationship counselling (Tier 2-3) more appropriate. Consider referral for exercise physiology to manage physical rehabilitation and exercise (Tier 2-3).

Treatment / Progression	Interventions (Tier alignment)
Stage Three	**Pending progress with Stage One & Two, to consider:** To meet with GP to consider progress and step up, maintain or step down treatment of presenting issues with mental and physical health and function as indicated (Tier 2). Referral to a Veteran specific employment service (Tier 1). Commitment to extend exercise physiology, join local gym or engage with Veteran or community based sporting club to progress physical health and connectedness with others (Tier 1-2). Develop plan for improved social connection with family, friends and community including ESOs (Tier 1-2). Assess and consider opportunity or advantage derived from intervention to improve relationship and support family function.

5.4.2 Case example 2: Carol C.

5.4.2.1 INTAKE AND ASSESSMENT (FIRST PRESENTATION)

Carol C is a 51 year old, single, recently unemployed nursing manager who lives alone. Carol spent 25 years in the Army in the Nursing Corp before taking retirement 8 years ago in 2012. Carol entered treatment following a medical assessment tied to a compensation claim after she was encouraged to 'fill out the forms' by her elderly parents and friends with whom she formerly served and caught up with socially every 3-4 months.

At the time, she was becoming worried as work was becoming more difficult for her in the context of persistent problems of agitation, rising anger resulting in a number of incidents of staff conflict, and growing low mood, pessimism and general despondency.

Carol saw the appointed psychiatrist for assessment. In offering a history of service, Carol informed that she joined the Army at 18 years of age with the support of her family seeking a career in nursing as something she had always wanted to do. She was happy to remain in the role throughout her career and enjoyed some success which was acknowledged through increases in rank finishing her career in the rank of sergeant. Carol undertook multiple deployments to war zones during her period of service and was involved in disaster relief efforts. Carol reported that she felt she managed deployments well including occasions when she was on the front line and came under fire or her unit was targeted with improvised explosive devices. That said, Carol reported that she was more unsettled than previously after her last tour of Afghanistan, and while she was always unsettled following operational tours, that tour was somehow different despite believing it was not as eventful as others.

Carol's son, she reports, is autistic and did not manage the constant changes associated with various postings, deployments and long exercises which resulted in Carol constantly moving in and out of the home.

In offering information about her social circumstances, Carol divulged that she is divorced with one adult son to that marriage. She stated that she and her former husband parted amicably after 25 years indicating that periods of constant separation led to increasing distance between them and between Carol and her son. Carol's son, she reports, is autistic and did not manage the constant changes associated with various postings, deployments and long exercises which resulted in Carol constantly moving in and out of the home. Accordingly, on the final two postings Carol had before she and her husband separated, Carol went unaccompanied. After these, divorce seemed a natural progression according to Carol. Carol has not had any contact with her ex-husband nor son over the last 18 months. She lives in her own 3 bedroom home in a cul-de-sac on the fringes of the city with an elaborate security system throughout the home. Carol is financially stable with a small loan on her car to pay. However, she informs she does need to work to pay bills and to pay for home maintenance.

Carol reported that she has a few lower back complaints, is a few kilograms overweight and does not exercise. She described her nutrition as "appalling" with the large part of her diet consisting of microwaved ready-meals. Carol orders her food and alcohol online and has it home delivered, explaining that she gets frustrated with crowds and stormed out without anything on the last two occasions she went into a grocery store. Carol sees few friends, chiefly old Army nursing colleagues, and has rare contact with her parents and brother who live in another part of the country. She recognises she is becoming increasingly isolated.

Following assessment the psychiatrist diagnosed Carol with PTSD with comorbid anxiety disorder and depression. She was also diagnosed with alcohol abuse after admitting she has no alcohol free days each week, averages 4-6 standard drinks as a minimum each night and partakes in a once weekly binge to excess if not working the following day.

5.4.2.2 TREATMENT PLANNING

In a follow-up appointment to consider treatment, the psychiatrist worked with Carol to develop and manage an initial treatment plan. As the plan evolves, the psychiatrist recommends Carol is referred to the case management team at the Department of Veteran Affairs (DVA) for the coordination of her treatment. The treatment plan presented to Carol's appointed case manager requests, in the first instance, a referral for guideline recommended psychological treatment for PTSD, monitoring of her alcohol use, and asks the case management team to give some consideration to interventions to address Carol's "problematic lifestyle issues". The psychiatrist informs he is happy for Carol to be re-referred if a re-referral is indicated.

In line with the psychiatrist's request and in consultation with Carol, the case management team refer Carol to a local psychologist who they have regularly used to offer evidence-based psychological treatment for PTSD. Carol and the psychologist agree to use Cognitive Processing Therapy (CPT) to address Carol's PTSD given she understands and is willing to engage in the homework activities and believes the space to reconsider some of the assumptions she is making would be helpful. The psychologist agrees to work with Carol to monitor her alcohol intake while offering the CPT, however indicates that should this escalate problematically, a referral to a program or service with more expertise in the area might be indicated. The case manager is tasked with discussing intervention(s) to address the broader 'problematic lifestyle issues' with Carol.

The case manager and Carol agree that focusing on her compensation to stabilise her financial position is a priority at this time.

5.4.2.3 TREATMENT PROGRESS

Carol attends a follow up appointment with her appointed case manager to discuss progress. She informs that she attended 13 weekly sessions of CPT, recently concluded, and feels she achieved some benefit from the treatment though continues to experience a number of residual problems and reports no great change in function and quality of life as yet.

Carol speaks more clearly about her mental health challenges seemingly benefitting from the psycho-educational component drawn from treatment. In that context she reports that she remains concerned about her elevated level of 'hyper-vigilance' and pre-occupation with 'potential' threat in addition to her worsening insomnia. Carol does report some improvement in her mood indicating acknowledgement she has a health problem arising from her service, the positive experience of treatment, and the treatment itself have all contributed to raising her 'spirits'. In addition, Carol informed that she has received notification that she will receive a compensation payment from DVA. Carol stated this will ensure she is financially secure as she engages in treatment and has significantly eased her anxiety. More discouragingly, Carol informs that she has recently ceased driving in the city and has delayed efforts to return to work. At the same time, while refusing to use public transport, Carol is becoming increasingly isolated. Carol notes her alcohol consumption decreased while in treatment with first one then two alcohol free days per week but senses it is increasing again. Carol reported that she is concerned her mood will go the same way suggesting she has drawn a link between her level of alcohol consumption and her mood. The two plan a further follow up session with feedback from the psychologist to think about 'next steps'.

5.4.2.4 TREATMENT PLANNING (REFORMULATION)

At their next meeting Carol's case manager contacts the treating psychologist (who offered CPT to Carol) for feedback. The psychologist agrees with Carol that she has benefitted from treatment of her PTSD, with some reduction in the frequency and intensity of PTSD symptoms, but further intervention would be helpful and is indicated.

Acknowledging that there are further options within guideline recommendations for PTSD treatment and an increasing literature on augmentation of guideline recommended PTSD treatments (see Metcalf et al., 2020) the three work to formulate a further treatment plan. In line with Carol's goals and priorities for treatment, a re-referral to the psychiatrist who diagnosed Carol is agreed, with a plan for discussion of trialling guideline recommended medications for her PTSD. Thereafter, given the priority to better managing hyper-arousal, irritability and insomnia, a number of options are discussed. As discussion unfolds, Carol is given choice as to whether she feels there is value in advancing a referral and stepping up her treatment into a short term, intensive PTSD program (if feasible), or to look at a personalised treatment plan tailored to her specific needs.

The PTSD intensives have a broad focus on PTSD with a detailed focus on treatment of symptom clusters (e.g., arousal management) and the signature comorbidities (e.g., alcohol misuse) while additionally exposing individuals to options and initiatives that reinforce value in a focus on function, wellbeing and positive lifestyle change (e.g., nutrition, meaningful use of leisure time and exercise). This treatment is typically delivered in a mixed group and individual format and has additional benefits derived from being with other Veterans with similar complaints and building a familiar and supportive social network for the Veteran that gels with other members.

As an alternative, Carol is informed that an individualised program can have these same features as a PTSD intensive with the additional benefits of increased personalisation of treatment. Carol is told that management of this approach involves a number of referrals to a number of services balancing treatment demands against each other and broader lifestyle issues. Importantly, ongoing communication between Carol, the case manager and treatment provider(s) to regularly discuss the frequency, intensity and breadth of treatment and the impact treatment is having is critical to the success of this approach. With this in mind, a list of potential areas of intervention and support are listed before prioritising a treatment pathway with Carol.

Left to make her choice, Carol informs she does not feel comfortable with engaging in a group program at this stage and would rather design her own program. Carol has consistently reported difficulties with understanding how she has PTSD when others in more frontline roles in the military have not. Carol decides she would initially like to discuss medication with the psychiatrist, look to engage in an anxiety management program to find ways to cope more effectively with her anxiety and see someone about her sleep. She acknowledges a need to socialise more and “perhaps” reconnect with family and friends. She also concedes she needs to be more vigilant about her alcohol consumption. Carol baulked at discussion about lifestyle factors such as diet and sighed heavily at the thought of exercise indicating some external motivation provided by an exercise physiologist or similar would be helpful in getting her started. She stated that a key goal for her would be to get back to work. All leave the session with a plan, a date for review and an understanding treatment plans will likely need to be formulated and reformulated as Carol's recovery progresses.

5.4.2.5 SUMMARY ACROSS A STEPPED / MATCHED MODEL

Treatment / Progression	Interventions (Tier alignment)
Intake and assessment (initial consultation)	Assessment & formulation of problems with Department of Veteran Affairs appointed psychiatrist (Tier 3). The psychiatrist requests a referral for guideline recommended psychological treatment for PTSD (Tier 3-4), monitoring of alcohol use (Tier 2), and asked the case management team to give some consideration to Carol's "problematic lifestyle issues" with a follow up appointment in 3 months (Tier 1-3).
Stage One	GP, psychiatrist and psychologist offer psychoeducation about PTSD (Tiers 1- 2-3). Psychologist and Carol address her PTSD using Cognitive Processing Therapy (CPT) (Tier 3-4). Psychologist agrees to monitor Carol's alcohol use (Tier 2-3 level intervention). Case management/welfare services progress efforts to stabilising finances (Tier 2-3).
Stage Two	Re-referral to the psychiatrist who diagnosed Carol with PTSD to discuss guideline recommended pharmacological interventions for her PTSD. (Tier 3-4). Consideration of a broader approach to PTSD as offered in some specialist PTSD programs that offer interventions to manage comorbidities mentioned experienced by Carol (i.e., alcohol, anxiety, irritability and anger, and sleep disturbance), provide a broad exposure to evidence-based arousal treatments (e.g., mindfulness and meditation) with additional input into lifestyle matters of note including exercise and nutrition and consideration of interventions to improve social connectedness (Tier 5). Consideration of a guideline recommended anxiety management intervention noting advantages in a focus on increasing coping skills matched with practice implemented in a tailored exposure hierarchy with direct applicability to current lifestyle issues (i.e., real world benefits for Carol) (3-4). Referral for assessment of sleep difficulties and, assuming the problem is insomnia, Carol pursues guideline recommended treatment for insomnia (i.e., CBT-i) (Tier 3-4).

Treatment / Progression	Interventions (Tier alignment)
Stage Two (continued)	Depending on preference and perceived need, consideration is given on input to curb problematic alcohol use. Options include stepping treatment up a tier into more specialist treatment in the addictions area as well as considering stepping treatment down OR augmentation with treatment provided through a peer led, group based program as offered by alcoholics anonymous (AA), as well as consideration of pharmacological interventions targeting cravings and urges (Tier 2-3-4). Consideration of a referral for exercise physiology in order to design and kick start a program of regular exercise (Tier 2-3).
Stage Three	Continue to meet with appointed case manager to discuss treatment plans and coordination of care (Tier 3-4). Consider referral to an employment rehabilitation service to support a return to work (Tier 1-2-3). Ongoing support for interventions to progress development of a supportive social network including supportive counselling to aid reconnection with family (Tier 1-2).

6 Knowledge mobilisation and implementation of best practice

The previous section of the Conceptual Framework outlined a critical component of a high performing posttraumatic mental health system – a macro, stepped / matched model of care, with the evidence for effective interventions and treatment programs (EBPs) across different stages of the model and for various conditions.

The objective of this section of the Conceptual Framework is to understand how to best to implement the stepped / matched model of care and EBPs. This includes:

- The need for knowledge mobilisation and implementation science, what are they and why focus on them.
- Typical challenges to the effective implementation of best practice including at the practitioner level, at the provider / organisation level at the system level as well as challenges related to Veterans and their families.
- The building blocks for effective implementation of best practice, including specifics on where to start in the stepped / matched model of care and EBPs.

As outlined in the introduction, this section of the Conceptual Framework is approached from an intermediary organisation perspective, although this does not mean it is not relevant to other stakeholders. Despite this specific focus around implementation, it is intended to be helpful to the broadest possible audience. For the range of stakeholders with an ability to influence the outcomes for Veterans and their families – funders, insurers, policy makers, system managers, regulators, intermediary organisations, service providers, support organisations, practitioners and individuals, families and communities themselves.

Key points from this section

Implementing a next generation stepped / matched model of care to meet the posttraumatic mental health needs of the Veteran community requires effective engagement of Veterans and their families, intake, assessment and treatment planning practices, service navigation and care coordination across health and welfare sectors, as well as a commitment to EBPs and practical strategies to embed them.

Delivering effective programs to Veterans and their families involves change within complex adaptive systems that have multiple actors, including policy makers, funders, advocacy and community groups, health and welfare services and researchers.

To promote best practice and sustained use of EBPs, effective models that help embed practice change in the context of constantly evolving systems of care are required.

Knowledge mobilisation and implementation are part of an iterative cycle in which new knowledge informs practice, but also practice informs what knowledge is produced and how it can be most effectively applied. This means that knowledge mobilisation and implementation not only influence how evidence is used to improve the lives of Veterans and their families, they also inform the planning and development of research.

In order for implementation to be effective, strategies are not only required to promote timely adoption of EBPs but also to increase and maintain the reach and effectiveness of EBPs amongst the targeted community over time. This involves understanding stakeholder needs, and potential barriers and facilitators of effective practice across all levels of the posttraumatic mental health system, including:

- **Practitioner-related factors** such as knowledge and skills, perception of evidence-based practices and continuous learning.
- **Organisational factors** such as a provider / service's resources and leadership capacity, and its culture with regards to change and evidence-based practice.
- **Systemic factors** such as the policy and legislative environment, funding priorities and the way the service system is shaped.
- **Veterans and families-related factors** such as perception of own needs and service system, experiences of systemic disadvantage, capacity to access and engage with information and service provision, and relationship with service providers.

The approach to care proposed in this document, where Veterans' and families' needs are matched to the most effective support using individualised assessments conducted at all levels of the health care system, requires not only engaging with multiple sectors and systems of care but also taking into account how they will change over time. It also requires that research priorities are established in a timely manner based on gaps in practice and community needs.

The links between researchers, policy makers and services need to be well established so that EBPs and emerging knowledge are integrated in service systems in a way that is meaningful to all stakeholders, especially Veterans and their families.

This all means that the building blocks to knowledge mobilisation and implementation must work towards the following aims:

1. Building an inclusive approach to knowledge sharing and system improvement which places the needs of all Veterans at the centre of embedding evidence into practice.
2. Improved knowledge partnerships and knowledge sharing amongst researchers, government funding bodies and policy makers, practitioners and the Veteran community.
3. Effective systems to identify emerging needs and knowledge amongst the Veteran community and their formal and informal support systems to inform policy and research in a timely manner.
4. Increased availability of effective care, with greater number of Veterans and families accessing EBPs when they need it and at the right level of intensity as outlined in the previous section in terms of tiers including formal community-based services and supports, specialised mental health services and supports, and

1. highly intensive mental health services and supports.
2. Sustained use and effectiveness of evidence-based treatments and the systems that support them (e.g., MBC or care coordination).

Based on these five aims, the typical challenges outlined in the previous sub-section and a synthesis of the literature, this Conceptual Framework recommends six building blocks to effective knowledge mobilisation and implementation in a system:

Nurturing Leadership

- Engage with government decision makers so that policy directions and resourcing are consistent with and support implementation of best practice. Engagement needs to involve discussions about the system or intervention requiring implementation but more importantly, required resources and guidance for effective and sustained knowledge mobilisation and implementation efforts.
- Support intermediary organisations and knowledge brokers to provide implementation leadership and facilitation. The type of leadership provided should be based on an organisation's place in the service system. Intermediary organisations should be resourced to foster partnerships between health providers, researchers and the community in a sustainable manner.
- Support implementation efforts across all levels of leadership. This includes centralised leadership to support a shared vision and provide program continuity, as well as effective resourcing and local leadership to provide day-to-day guidance. In complex systems, top-down approaches to implementation are not recommended. Local leadership needs to be resourced and supported to ensure that interventions are adapted to local needs.
- Engage both formal and informal leaders in mobilising knowledge and changing practice. Informal leaders such as opinion leaders or community leaders should be, wherever possible, engaged in supporting change and quality improvements. Organisational leaders need to be resourced to support implementation efforts from the start so that they can foster organisational readiness and early adoption, and over time to champion EBP sustainment.
- Foster leadership capability for promoting practice improvement and the implementation of innovations. More research needs to be done to address this critical aspect of system change and implementation support.

Maximising collaboration

- Actively involve practitioners and clients in the planning and design of efficacy and implementation research in order to facilitate effective dissemination and implementation of new approaches.
- Include participatory research models and practice evaluation in research priorities. These types of research help identify how systems and service environments shape practitioner behaviour and the way in which communities access and utilise support. Whenever possible, they should be used as an opportunity to form partnerships for future dissemination and implementation efforts.
- Foster collaboration between treatment developers, knowledge brokers and service leaders to promote uptake and maintaining adoption. Implementation programs need to include system

designs and processes that encourage collaboration to adapt the delivery and implementation of EBPs to service needs, non-directive brokering of implementation by experts and/or trainers, and inter-agency partnerships.

- Ensure that implementation programs and the design of information packages about service systems and EBPs are informed by the needs and knowledge of the Veterans' community. It is important that service-users be given a clear role in developing and reviewing knowledge products and/or service design. Using process and outcome data collected from service users to inform this collaborative process is also critical.

Addressing inequity

- Consider drivers of inequities when designing knowledge mobilisation and implementation strategies, including policy advocacy, research-practice partnerships, capacity building and evaluation of implementation programs.
- Establish data collection infrastructure and reporting so that government decision makers, policy actors, researchers and services can set priorities that are informed by health inequities.
- Take a broadly inclusive approach to defining knowledge and research priorities, and recognise non-traditional sources of knowledge.
- Include the voices of Veterans and their families, including underrepresented groups among them, in all aspects of research, program design and roll-out.
- Ensure that the design of stakeholder engagement across the Veteran community is inclusive of marginalised and vulnerable community members. This includes developing a strong understanding of barriers and facilitators to access to effective care for those in the Veteran community that experience more vulnerability or are underrepresented because of their minority status.

Building capacity and capability

- Deliver capacity building programs with the context in which it is delivered in mind. The knowledge and skill needs of practitioners, as well as available organisational resources, climate and culture, need to be considered when developing training and support programs.
- Integrate capacity building activities in multifaceted implementation programs in order to be effective: standalone capacity building programs (such as training workshops or self-directed training through online learning) have had a limited impact on practitioner behaviour and need to be supplemented by other implementation strategies that address contextual barriers and facilitators of implementation. Programs should not solely rely on strategies aimed at individual practitioners to embed learning (e.g., combining training with ongoing consultation and supervision (for complex clinical interventions), or clinical reminders (used primarily for less complex interventions such as medication prescription).
- Establish learning communities and networks of treatment excellence that will continue to identify learning needs, monitor quality and improve practice. These practitioner networks need to be supported and resourced to continuously collect and use data to improve practice. Members of the network prioritise working with Veterans and their families and commit to ensuring providers and practitioners in the network build

- and maintain skills and competencies required of a multi-disciplinary workforce (clinical and cultural competence).

Integrating adaptability

- Focus on harnessing emergent solutions rather than pushing a standardised program onto a service system when implementing or scaling up innovative programs. This means that engagement with service system stakeholders needs to extend beyond consultation to forming partnerships where stakeholders have a shared and equal stake in changing practice.
- Establish a process and partnerships to foster co-production and collaboration across organisations and/or teams when fostering emerging solutions. Co-production and collaboration allow for ongoing problem-solving and learning from what has been trialled at different sites or by different teams.
- Optimise the way in which EBPs are delivered throughout the implementation process. Robust data collection and feedback processes need to inform how EBPs are being adjusted to fit the practice context. Use continuous quality improvement, including a robust data collection, analysis and feedback process to plan and assess improvements.
- Given that practitioners will adapt EBPs protocols, establish a process to understand what core elements of practice lead to good clinical outcomes and to take a planned approach to flexing treatment programs that target both clinical decision making and practical barriers.

Using data and feedback to sustain change

- Establish and maintain systematic data collection and analysis to assist in the planning and ongoing adjustment of implementation efforts.
- Conduct iterative assessments of individual, organisational and system based barriers and facilitators to assist in planning implementation efforts, adapting implementation strategies and understanding factors that led to EBP adoption and sustained use.
- Assess implementation outcomes at several points during implementation, including: 1) effectiveness and fidelity of delivery, 2) reach of interventions amongst service users, 3) penetration (i.e., integration of the practice within the health system or organisational processes), and 4) sustainability of EBP reach and quality.
- Establish MBC, wherever possible to embed EBPs through individual feedback and data-driven system-wide quality improvement planning. Ensure that MBC implementation is supported by well-resourced IT system, clear requirements and incentives for data collection and a sound reporting framework that is backed by a collaborative and supportive leadership.
- Ensure that a culture of quality assurance and improvement is established to support the use of data to improve practice and implement EPBs in a sustainable manner.

6.1 The need for knowledge mobilisation and implementation science

Implementing a next generation stepped / matched model of care to meet the posttraumatic mental health needs of the Veteran community requires many of the principles and features outlined in the future system design – effective engagement of Veterans and their families, intake, assessment and treatment planning practices, service navigation and care coordination across health and welfare sectors, as well as a commitment to EBPs and practical strategies to embed them.

While there is a wide range of services offered to the Veteran community to help prevent and respond to posttraumatic mental health issues (as outlined in the previous section), and there has been a concerted effort in many countries to coordinate care across the lifecycle of defence personnel, there remain significant challenges in implementing effective programs.

Unfortunately, efforts to implement effective care to date have been limited to a particular sector or target group with a narrow focus. For example, many efforts have been focused on providing guidance (e.g., standards of care) and training to practitioners about EBPs, and yet these efforts have for many years now been shown to result in small and often short-lived improvements in care when delivered in isolation (J. Cook et al., 2013; Prior, Guerin, & Bphty, 2008; J.I. Ruzek & Rosen, 2009).

There are two overarching deficiencies in most systems currently that emphasise the need for better knowledge mobilisation and implementation strategies:

- The gap between evidence and practice
- Effecting change in complex systems.

6.1.1 The gap between evidence and practice

As outlined in previous sections, there is an increasing evidence-base on effective approaches to supporting those affected by posttraumatic mental health issues, yet few in the Veteran community access effective programs.

Sustained roll-out of evidence-based systems of care and interventions have only partially improved access to EBPs. For example, the national capacity building program that aimed to increase the use of trauma-focused treatments across the US Veterans' Affairs service system led to a limited increase in Veterans receiving these treatments (J. Cook et al., 2013; Craig S. Rosen et al., 2017). Similarly, implementation of multi-disciplinary support care for homeless Veterans with dual diagnoses resulted in few receiving recommended services (Chinman, McCarthy, Hannah, Byrne, & Smelson, 2017).

In public health generally, it is well known that only just over half of prevention programs are evidence-based (Brownson, Fielding, & Green, 2018). Measurement-based care (MBC), a central element of this framework is not well utilised in many countries with some authors suggesting fewer than 20% of providers use assessment data to inform treatment (Cara C Lewis et al., 2019; Cara C. Lewis et al., 2015)

Conversely, practice-based knowledge does not always inform intervention research and thus makes service improvement and the integration of EBPs in service settings more complex. For many years, translation experts have called for a new approach to research that challenges the more traditional process of moving from efficacy research to testing an intervention's effectiveness in real world settings, to research synthesis and then dissemination (Graham, McCutcheon, & Kothari, 2019; Holmes et al., 2017). This more traditional approach is not only associated with long delays in the adoption of effective programs (L. Green, 2008), but can also result in difficulties when implementing effective care because community needs, service system requirements and individual practitioners' current approach are not always considered in the development of EBPs (Shelton, Cooper, & Stirman, 2018).

6.1.2 Effecting change in complex systems

Delivering effective programs to Veterans and their families involves change within complex adaptive systems that have multiple actors, including policy makers, funders, advocacy and community groups, health and welfare services and researchers.

Many experts have referred to the promotion of effective treatments within health systems as a 'wicked problem' and view the scaling up of preventative programs to be "one of the most vexing challenges faced by prevention science" (Fagan et al., 2019; Holmes et al., 2017). There is widespread agreement amongst these researchers that improvements in health care require a holistic approach that systematically targets consumer engagement, research and evaluation design, policy development and clinical governance and practice.

The adaptive, continually changing nature of health systems makes the development of an evidence base for interventions and sustained use of effective programs challenging (Chambers, Glasgow, & Stange, 2013; Holmes et al., 2017; E. K. Proctor et al., 2009). To promote best practice and sustained use of EBPs, effective models that help embed practice change in the context of constantly evolving systems of care are required.

Knowledge mobilisation and implementation science are two closely related fields that aim to address these deficiencies, address the gap between knowledge and practice, as well as promote effective change in complex adaptive care systems.

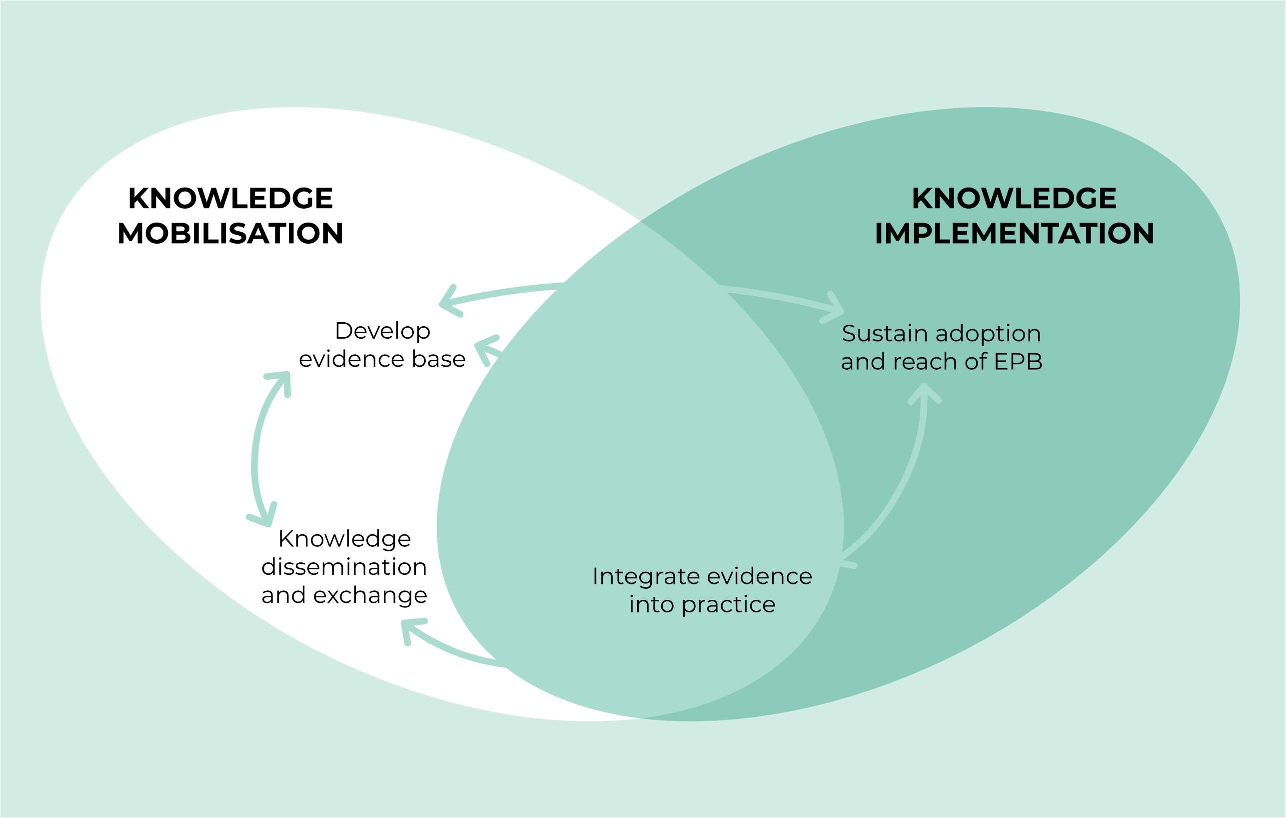


Figure 8: The knowledge mobilisation and implementation cycle

6.2 Framing knowledge mobilisation and implementation

Knowledge mobilisation and implementation are part of an iterative cycle in which new knowledge informs practice, but also practice informs what knowledge is produced and how it can be most effectively applied (see Figure 8). This means that knowledge mobilisation and implementation not only influence how evidence is used to improve the lives of Veterans and their families, they also inform the planning and development of research.

Knowledge mobilisation focuses on how knowledge about best practice can be created, disseminated and used to improve outcomes for the community (Rycroft-Malone et al., 2015; Ward, House, & Hamer, 2009).

Implementation describes strategies and processes required to integrate evidence-based treatments and programs into routine clinical practice in order to improve the quality and effectiveness of care (Nilsen, 2015; E. K. Proctor et al., 2009).

While knowledge mobilisation is concerned with the way in which research evidence can be accessed and effectively used, implementation focuses on how service systems and routine practice can be transformed to increase access to evidence-based practice.

6.2.1 Knowledge mobilisation: beyond evidence into practice

Common knowledge mobilisation activities include synthesising research findings and disseminating knowledge about EBPs and effective systems of care. For the past decade, these activities have been seen as part of a multidirectional process between researchers, policy makers, practitioners and communities receiving services. No longer is knowledge produced by researchers seen as a product to be packaged and disseminated to end-users so it is acceptable and easy to understand and action. Instead, translational experts now focus on how practice-based knowledge and research evidence can come together to inform health care improvements (Allan Best & Holmes, 2010; Rycroft-Malone et al., 2015). In other words, effective knowledge mobilisation does not just look at how to effectively promote 'knowledge uptake' by those delivering or using services, but also how to foster effective knowledge partnerships and collaborations.

6.2.2 Implementation: promoting scaling up and sustained EPB in dynamic environments

As with knowledge mobilisation, the past ten years have seen a shift in implementation science's focus. Initially implementation research was concerned with identifying strategies that promote the adoption of EBPs by practitioners and their integration in organisational processes and culture. That is, most implementation research examined practitioners' intent to use a practice, whether they used this practice consistently and whether the practice was embedded in organisational policies, routines and decision-making. Increasingly, factors that support sustained adoption of EBPs over time have informed implementation efforts (Chambers et al., 2013; Shelton et al., 2018). Challenges with scaling-up effective programs and interventions have also been increasingly examined as initial EBP adoption has been regularly found to not lead to wide scale utilisation or access (J. Cook et al., 2013; Fagan et al., 2019). In order for implementation to be effective, strategies are not only required to promote timely adoption of EBPs but also to increase and maintain the reach and effectiveness of EBPs amongst the targeted community over time.

6.3 Contextual factors that support or hinder effective best practice implementation

To ensure that evidence-based interventions reach as many Veterans and families as possible, and that they are rolled out in an effective and sustainable manner, it is critical that the context in which they are used is taken into account (Damschroder et al., 2009; G. Harvey & Kitson, 2016; Nilsen, 2015; Nilsen & Bernhardsson, 2019; E. K. Proctor et al., 2009) This involves understanding stakeholder needs, and potential barriers and facilitators of effective practice across all levels of the posttraumatic mental health system, including:

- Practitioner-related factors such as knowledge and skills, perception of evidence-based practices and continuous learning.
- Organisational factors such as a provider / service's resources and leadership capacity, and its culture with regards to change and evidence-based practice.
- Systemic factors such as the policy and legislative environment, funding priorities and the way the service system is shaped.
- Veterans and families-related factors such as perception of own needs and service system, experiences of systemic disadvantage, capacity to access and engage with information and service provision, and relationship with service providers.

The conceptualisation of contextual factors varies across implementation models (Nilsen & Bernhardsson, 2019) and research has not used these concepts consistently, giving rise to contradictory findings. Barriers and facilitators that are consistently found in the literature have been prioritised, particularly in studies that have examined system level change to promote evidence-based practice in mental health. The learnings from the focused implementation programs rolled out in Veteran mental health organisations within the US VA and Australia have also been relied upon.

6.3.1 Practitioner-level

A number of individual factors can influence the implementation of effective care including practitioner characteristics (e.g., experience and preferred approach), attitudes (e.g., beliefs about interventions) and behavioural habits (Damschroder et al., 2009; G. Harvey & Kitson, 2016; E. K. Proctor et al., 2009).

It is particularly important to understand what influences an individual practitioner's decision-making as this plays a critical role in the initial adoption and sustained use of EBPs and practices that support them (e.g., MBC). For example, a recent study of US healthcare providers working with HIV, found that routine testing was driven mainly by practitioner preference or practice-based policies rather than evidence-based national guidelines (Gunn et al., 2019). In Veteran mental health, practitioners are faced with a wide range of mental health conditions that present in multifaceted ways across a person's lifecycle. This often requires making complex choices when matching the needs of Veterans and their families to the most appropriate treatment.

Understanding what influences EBP adoption choices is thus a central concern in establishing a stepped / matched model. A number of factors have emerged as particularly important in this area. A practitioner's skills, sense of efficacy and their perception of the recommended intervention influence their intent to use EBPs and supporting recommended practices (J. M. Cook et al., 2015; Couineau & Forbes, 2011; Josef I Ruzek et al., 2016). The following address a selection of these issues in more detail.

6.3.1.1 PRACTITIONER SKILLS

A practitioner's skill in delivering an intervention is crucial, as is enhancing practitioners' belief in their own capabilities to deliver the intervention competently within their specific context. The more confident an individual feels about their ability to make the changes needed to achieve the implementation goals, the more likely they are to embrace the intervention and overcome the various obstacles to successful implementation. It is reasonable to assume that prior familiarity with the theoretical and clinical models underlying the new approach – for example, a background in cognitive behaviour therapy (CBT) when delivering trauma-focused treatments for PTSD or training that emphasises the use of measurement to guide care – would be an advantage. The research, however, is not entirely clear. Some studies have found, as expected, that the match between the clinician's approach and the EBP can impact on implementation, with later adoption of prolonged exposure (PE) in the VA roll-out for those who were not from a CBT background (Craig S. Rosen et al., 2017). On the other hand, Eftekhari et al. (2015) found that treatment orientation, prior experience in treating PTSD, and prior experience with PE did not predict clinical outcomes during implementation. This latter finding is encouraging given the need to implement EBPs across a system with clinicians from varying backgrounds.

6.3.1.2 PRACTITIONER BELIEFS AND ATTITUDES

Beyond the factual and clinical knowledge required to deliver a recommended intervention, the practitioner's beliefs and attitudes about the approach will influence the effectiveness of the implementation. These attitudes may be generated not only from knowledge of the literature, but also from opinion leaders, local champions and peers, as well as providers' own clinical experience about how the new practice is likely to affect their patients and themselves. Indeed, opinions obtained from peers based on personal experiences are often more accessible and convincing, with positive opinions helping to generate enthusiasm and negative opinions potentially creating a source of active or passive resistance (Damschroder et al., 2009).

Beliefs about the role and value of evidence have consistently been shown to impact on a practitioner's intent to use EBPs (Gregory A Aarons & Sommerfeld, 2012). The belief in the value of an intervention or its impacts can also influence the adoption of new practices. For example, a Canadian evaluation of the implementation of routine outcome monitoring in Operational Stress Injury Clinics found that staff who reported low use of outcome data in their practice were less likely to believe in the value of outcome monitoring when compared with high users (Ross, Ionita, & Wiltsey Stirman, 2016). Studies examining practitioners' perceptions of trauma-focused interventions show that a common barrier to EBP adoption is the fear that the new interventions will be too distressing for Veterans and families, leading to clinical deterioration rather than improvement (Couineau & Forbes, 2011; Gray, Gray, Elhai, & Schmidt, 2007; Josef I Ruzek et al., 2016). These negative outcome expectancies reduce clinician engagement and motivation, making it less likely that the EBP will be adopted or sustained. While training and ongoing consultations can help shift these beliefs (Josef I Ruzek et al., 2016), these changes do not necessarily lead to extensive use of EBPs in the long term (J. Cook et al., 2013; Craig S. Rosen et al., 2017). On the other hand, some studies have found that positive practitioner attitudes about self-efficacy and intervention effectiveness following implementation are associated with longer term adoption and greater reach (i.e., a greater number of clients receiving recommended interventions) (Craig S. Rosen et al., 2017). These

> Ensuring evidence-based interventions are rolled out effectively to Veterans and their families, it's critical to understand the contex of the practitioner, the organisation, the system and the Veteran themselves.

results demonstrate that much more needs to be understood about the role of practitioner beliefs, with some beliefs more likely to be associated with sustained and wide reaching EBP adoption.

6.3.2 Provider / organisation level

Multiple factors at an organisational level may act as barriers or facilitators in the adoption and sustainability of recommended practices. For example, the proposed interventions need to be consistent with the organisational aims and values. The organisational culture needs to espouse a broad commitment to recommended practices and to being evidence-based, with strong and unequivocal engagement of both clinical and management leadership (G. A. Aarons et al., 2016; Byron J Powell et al., 2016). Clinical staff not only need to have (or be trained in) the requisite skills, but they also need to be actively engaged in the process as partners, collaborators and champions. Organisations that are adaptable and flexible, open to new ideas and willing to regularly review their own policies, procedures and practices will be better able to deal with the challenges of implementing EBP. Similarly, organisations committed to best practice clinic operations such as treatment planning, treatment preparation, progress monitoring and peer review are likely to perform better in adopting and sustaining EBP. The following address a selection of these issues in more detail.

6.3.2.1 ORGANISATIONAL CLIMATE AND CULTURE

Organisational climate and culture are crucial factors in improving systems of care and the successful adoption and sustainability of EBP. Organisational culture refers to shared employee perceptions about the values, expectations, and norms regarding the manner in which work is carried out within the organisation. Organisational climate refers to shared employee perceptions about how their work environment affects their own personal wellbeing and therefore capacity to manage change (Charles Glisson & Glisson, 2002; C. Glisson et al., 2009). It also refers to how staff collectively perceive the way policies and procedures, rewards and expectations align with, or reinforce current approaches to work and clinical routines (Ehrhart, Aarons, & Farahnak, 2014; S. N. Smith et al., 2018). In terms of implementation of new systems of care and EBPs, this includes whether employees believe that the organisation requires and values flexibility and openness to EBPs and provides policy support and rewards for using EBPs or the practices that support them (e.g., advancement, recognition or monetary compensation) (Ehrhart et al., 2014; Ehrhart, Torres, Hwang, Sklar, & Aarons, 2019).

Positive organisational cultures and climates are associated with positive attitudes towards EBPs (Gregory A Aarons & Sommerfeld, 2012) and sustained practice change (Charles Glisson et al., 2008). Some researchers have noted that organisational climates and cultures that support efficacy and proficiency, and are associated with less stress and increased engagement with change and evidence, are particular important for successful implementation (G. Aarons et al., 2012; Rinad S. Beidas et al., 2014). One study focusing on targeted implementation strategies that aimed to address contextual and process related barriers to adopting new practices observed that more task-focused (i.e. performance and goal driven) and entrepreneurial (i.e. value innovation and willing to take risks) cultures were associated with greater efficacy of these strategies (S. N. Smith et al., 2018).

6.3.2.2 INTERVENTION ALIGNMENT WITH ORGANISATIONAL CONTEXT AND ADAPTATION

The implementation of a new approach to care has a much greater chance of success if it is perceived by all those involved as aligning with existing goals, values and contexts. At the organisational level, how well the intervention fits with organisational requirements, as well as the perceived alignment between the intervention and client and organisational needs, will influence adoption and sustainability. In order to achieve this fit, practitioners and organisations will often adapt programs and treatments to fit their client groups, funding models and structures. In fact, most implementation models (e.g., Gregory A Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009; G. Harvey & Kitson, 2016) are based on the premise that an EBP that can be adapted to the local clinical context is more likely to be adopted and that, in practice, most practitioners tend to be flexible in their use. There may be mutual adaptation between the intervention and the organisation or system; that is, the intervention may be adapted to improve fit with the organisation and organisational procedures may be adapted to improve alignment with the intervention. Cohen et al. (2008) investigated adaptation during the implementation of ten different health promotion interventions in primary care and found that all the interventions required changes as they were integrated into practice. Similarly, researchers evaluating the VA roll-out of trauma-focused therapies reported evidence of intervention adaptation to meet the structural needs of participant organisations (J. Cook et al., 2013; Craig S. Rosen et al., 2017). In both studies, researchers noted that there was little knowledge about how EBPs were adapted and called for further research in this area.

Thus, although there is broad recognition that adaptation is not only fairly common, but may also be actually necessary to ensure sustainability in some cases (Shelton et al., 2018), there is little research that adequately examines the process of adaptation (Wiltsey Stirman et al., 2012). In the absence of strong empirical guidance, the challenge is one of ensuring that this adaptation is done systematically as part of a planned process, rather than in an ad hoc manner as implementation progresses.

Part of that challenge is to ensure that the fidelity of the interventions are maintained during the process of adaptation, with associated implications about how fidelity is measured and promoted (seeJ. Cook et al., 2013; Galovski, Blain, Mott, Elwood, & Houle, 2012; Wiltsey Stirman et al., 2012). This is particularly important, since high fidelity has been associated with positive program outcomes (Durlak & DuPre, 2008).

6.3.2.3 LEADERSHIP - ORGANISATIONAL LEADERS/MANAGERS

The research is clear that leadership plays an important role in facilitating service improvements and the adoption of EBPs (G. A. Aarons et al., 2016; Gregory A Aarons & Sommerfeld, 2012). Leadership style has been shown to predict full, partial, or no sustainment of implementation efforts, with the role of "first level" leaders – those who supervise individuals providing direct services – being particularly critical. One of the most studied models is that of Full-Range Leadership (FRL; Bass, 1999), which describes leadership behaviours within two primary dimensions: transformational and transactional leadership. Transformational leadership is the degree to which a leader can inspire and motivate others to follow an ideal or a particular course of action. It comprises four key domains: a) appreciation of each staff member's individual contributions and needs, b) the ability to stimulate thinking and accept different perspectives, c) the ability to inspire and motivate staff, and d), the degree to which the leader acts confidently, instilling pride, respect, values and a strong collective sense of mission. Transactional leadership, on the other hand, focuses on managing incentives and rewards, meeting quality standards, and providing the support that staff need to complete their daily tasks. Both transformational and transactional leadership are important for managing and supporting organisational change. Leadership that is not characterised by those factors, such as passive-avoidant leadership styles, predicts non-sustainment of new initiatives (G. A. Aarons et al., 2016).

In short, leadership styles that are able to promote a climate of innovation and positive attitudes toward new practices, that focus on strong relationships with and among staff, and that effectively implement management processes such as auditing and feedback, are most likely to be effective in the adoption and sustainability of EBP and the systems that support their use. Equally, it is unlikely that leadership alone will be effective for EBP implementation without attention to the organisational context issues discussed above – both are important for improving practice and promoting EBP use.

6.3.2.4 LEADERSHIP – OPINION LEADERS

Official leaders – in the form of supervisors and managers – are not the only important influencers in the system promoting the adoption and sustainability of EBP. Anyone in the system that is able to champion change has the potential to be an important player in the implementation process. These local opinion leaders are individuals perceived as credible and trustworthy by those responsible for delivering the changed practice. They may be involved in, for example, informal one-to-one teaching and support or community outreach education visits. The use of local opinion leaders is a potentially promising strategy to bridge the evidence-practice gap (Flodgren, O'Brien, Parmelli, & Grimshaw, 2019).

Some empirical support exists for the effectiveness of local opinion leaders alone, or in combination with other interventions, in promoting evidence-based practice. Regrettably, however, the research findings are conflicting and the effectiveness varies both within and between studies. A recent Cochrane review of the area concluded that the use of local opinion leaders probably improves the ability of healthcare professionals to follow evidence-based guidelines but, importantly, emphasised that it is not known if patient outcomes are actually improved (Flodgren et al., 2019). The research covered in that review was not strong, with generally poor methodologies and limited descriptions of what was actually done.

Thus, although there is cautious support for the use of local opinion leaders in enhancing the adoption and sustainability of EBP, further research is needed to improve understanding of which factors contribute to their effectiveness. In short, more needs to be known about what local opinion leaders actually do and how they do it.

6.3.3 System-level

6.3.3.1 POLICY DIRECTIONS AND FUNDING ENVIRONMENT

The broader socio-political environment in which services are delivered can also serve to hinder or facilitate knowledge mobilisation or implementation efforts. Most current models that seek to outline factors that influence dissemination or implementation outcomes take a systems-based approach to understanding change (Allan Best & Holmes, 2010; Holmes et al., 2017). Most include constructs that represent the political, socioeconomic, policy and funding environment (Gregory A Aarons et al., 2011; Damschroder et al., 2009; G. Harvey & Kitson, 2016; Nilsen, 2015).

Political priorities and media coverage can influence clinical decision makers' priorities but most importantly, can impact on funding and policies. For example, in Australia, the Royal Commission into Institutional Abuse and the ADF's 2011 commissioned review into sexual and other abuses have led to an increased focus on military sexual trauma and gendered abuse in the context of serving. This has led to reform in compensation and capacity building across the health and compensation sector.

The influence of policy directions and service funding has been seen as a significant influence on uptake of EBPs and scaling up of implementation efforts across the literature (G. A. Aarons et al., 2016; Fagan et al., 2019; Byron J Powell et al., 2016; Wiltsey Stirman, A Gutner, et al., 2015). It is difficult however to measure the impact that these factors have had on implementation outcomes, particularly on how they may lead to increasing the reach of EBPs amongst service users or maintain adoption of EBPs over time (B. Powell & Beidas, 2016). Most of the research to date has been qualitative and more needs to be done to understand the impact of systemic factors.

6.3.3.2 PAID INCENTIVES

One area of funding that has been examined in more detail – the use of payment as incentives to promote the use of EBPs and associated practices such as routine outcome monitoring – has led to mixed findings. Most of the research for paid incentives is in primary health. A Cochrane review of primary care physicians found insufficient evidence to support the use of financial incentives to improve the quality of primary health care (A. Scott et al., 2011). One Canadian study in primary health showed that reimbursed training in evidence-based screening and cognitive behaviour self-management tools for depression, anxiety and chronic illness increased use of these tools, with a perceived positive impact on patients, as well as self-reported job satisfaction (MacCarthy et al., 2013). In mental health settings, one study found that the use of paid incentives when used alongside other implementation strategies may lead to increased identification of service users in need of support and greater uptake of the EPB (Rinad S Beidas et al., 2016). A randomised control trial comparing use of payment incentives to standard training and coaching to implement an evidence-based intervention for adolescents with substance use issues had encouraging results. Monthly bonus payments linked to improved performance combined with training and coaching support resulted in improved competence and increased delivery of target treatment to clients, but not improved client outcomes (Garner et al., 2012).

6.3.4 Veterans and their families

Many cultural, demographic and clinical factors can influence whether or not a Veteran and their family engage in treatment. These have been explored in detail in previous sections and some content is repeated here in relation to effective implementation. In terms of implementation, success will be driven in part by a systems capacity to identify and engage the individuals and groups who are least likely to be able to seek treatment for their posttraumatic mental health problems or those that experience significant barriers accessing and engaging in evidence-based care.

6.3.4.1 CULTURAL AND DEMOGRAPHIC FACTORS

From a cultural perspective, the warrior ethos that prizes self-reliance and strength in the face of adversity, so characteristic of military forces around the world, may make it difficult for Veterans to acknowledge problems to others and even to themselves. Even if they do acknowledge difficulties, many Veterans refuse mental health care on the grounds that they would rather handle the problem on their own (Naifeh et al., 2016). Since this attitude ("I can deal with it myself") seems to be relatively common, it is important to better understand this preference for self-management in order to increase engagement and modify, where appropriate, the way in which services are delivered.

This is closely related to broader issues of the individual's personal beliefs about treatment – effectiveness confidentiality, tolerability, and so on – which influence decisions to seek care (Bovin et al., 2018; Coleman et al., 2017). The whole area of Veteran culture is, of course, inextricably linked with the issue of stigma discussed in Section 2 above. In some countries, transitioning from seeking support within military health services to civilian service environment has also been noted as a barrier to timely access to treatment with Veterans having to not only contend the above mentioned barriers but also a new context with unfamiliar pathways to care and a different culture (J.M. Thompson et al., 2011). Engaging with organisations that have an understanding of military culture can help facilitate engagement.

From a demographic perspective, the research suggests that many factors, including age, gender, race, socioeconomic status and marital status, have the potential to act as barriers or facilitators to treatment. It is important to understand how service systems and treatment programs engage with different groups and the barriers that these groups may experience. For example, a mental health service that mostly caters to male Veterans, with no visible materials on intimate partner or sexual violence, may not provide an environment where female Veterans feel comfortable disclosing these experiences and seeking treatment. Similarly, a service that is funded and structured to mainly focus on combat/operational stressors or military experience may not have an intervention or assessment model that fits with the intergenerational nature of trauma experienced by Veterans from an Indigenous background (Sotero, 2006).

While broader strategies that aim to address stigma and challenge beliefs that prevent Veterans from seeking treatment are an integral part of improving access to care, thinking about the role of the Veteran community in the implementation of EBPs and improved systems of care is also important. In other words, Veterans and their families, particularly those from groups that experience significant barriers, need to be engaged in shaping a system of care so that their needs and perceptions of the service environment are taken into account.

6.3.4.2 CLINICAL FACTORS

From a clinical perspective, the high levels of avoidance that characterise PTSD and related conditions may stop Veterans engaging in treatment, since most effective treatments for PTSD require people to do the exact opposite and to confront feared situations and the traumatic memory in detail. Avoidance may contribute to difficulties in treatment engagement, early drop out and a delayed return to treatment. Other clinical factors include "readiness to change", the ability to tolerate and cope with negative emotions, and "buy-in" to the treatment rationale, although good data regarding these factors in Veteran populations is lacking (S. Kehle-Forbes, Kimmerling, R., 2017). Helping clients make collaborative decisions about the nature and timing of their care with their treatment provider is therefore a critical element of implementing EPBs. It is also worth noting that the Veteran's involvement in potentially adversarial compensation processes can contribute to delays and interruptions in treatment, potentially undermining recovery.

6.3.4.3 SHARED DECISION MAKING

As discussed previously, shared decision making (SDM) has the potential to mitigate some of the client-level barriers and become a core feature of an effective Veterans' posttraumatic mental health service system.

SDM in posttraumatic mental health care involves clinicians and patients working together to make decisions through the provision of accurate information about treatment options, outcomes and side effects (Harik, 2018; Slade, 2017). There are several reasons why this is important. First, SDM appears to increase engagement and motivation of both the Veteran (or partner) and the clinician as they work collaboratively together in planning treatment (Harik, 2018; S. Kehle-Forbes, Kimmerling, R., 2017). Second, although the empirical evidence is not strong, it is reasonable to assume that SDM would lead to improved outcomes (Harik, 2018). Preliminary attempts at SDM using patient decision aids in PTSD have certainly yielded encouraging results (Watts et al., 2015). Thus, even in the absence of proper shared decision making, decision aids such as booklets that educate patients and involve them treatment decisions even at a relatively superficial level may enhance patient satisfaction and treatment outcome (Harik, 2018). Finally, it has been argued that SDM – giving patients an informed choice in their treatment – is ethically the "right thing to do" (Slade, 2017). The process has great potential to support educated decisions about treatment to empower the Veteran and/or family member.

Although the benefits of SDM in posttraumatic mental health may be slightly more equivocal than in physical health, there is enough support for the approach to recommend its routine adoption (Harik, 2018). At this point, it is important to reiterate the role played by SDM in facilitating engagement of Veterans in EBP.

SDM is not a long, complex, or arduous process and may be therefore easy to implement. Positive results, for example, were demonstrated in a pilot study with Veterans using only a simple, 30-minute intervention (Mott, Stanley, Street Jr, Grady, & Teng, 2014). That study used a manual to guide clinicians through the key steps (i.e., a "choice talk" to explain how the person can have a role in treatment decisions; an "options talk" to provide information about benefits, risks, and effectiveness of treatments; and a "decision talk" to discuss preferences and reach a decision). It also used a 12-page patient decision aid (PDA) that included a comparison of each featured treatment and briefly described other options. They found increased patient preference for EBP and increased retention in treatment in the SDM group. A later, larger RCT (Watts et al., 2015) also found that SDM helped to engage Veterans in EBP. That study adopted an even simpler approach, using only a PDA (an illustrated booklet describing comparative risk, treatment burdens and treatment effectiveness) that patients viewed in private without any clinician (or researcher) interaction. That study also found those in the PDA group, even without the clinician as a "guide", were more likely to select an EBP and had superior PTSD outcomes compared with the control group.

In short, supporting Veterans and families to make decisions about their care, and incorporating this into treatment planning and goal setting, is a relatively simple and effective way of mitigating some of the client-level barriers, promoting Veteran and family engagement in EBP and improving outcomes.

6.4 Where to start: building blocks for effective knowledge mobilisation and implementation

This proposed approach to care, where Veterans' and families' needs are matched to the most effective support using individualised assessments conducted at all levels of the system, requires engaging with multiple sectors and systems of care as well as taking into account how they will change over time. It also requires that research priorities are established in a timely manner based on gaps in practice and community needs.

The links between researchers, policy makers and services need to be well established so that EBPs and emerging knowledge are integrated in a way that is meaningful to all stakeholders, especially Veterans and their families.

This all means that the building blocks to knowledge mobilisation and implementation must work towards the following aims:

1. Building an inclusive approach to knowledge sharing and system improvement which places the needs of all Veterans at the centre of embedding evidence into practice.
2. Improved knowledge partnerships and knowledge sharing among researchers, government funding and policy makers, practitioners and the Veteran community.
3. Effective systems to identify emerging needs and knowledge amongst the Veteran community and their formal and informal support systems to inform policy and research in a timely manner.
4. Increased availability of effective care, with greater number of Veterans and families accessing EBPs when they need it and at the right intensity, as outlined in the previous section in terms of tiers including formal community-based services, specialised mental health services and highly intensive mental health services and supports.
5. Sustained use of evidence-based treatments and the systems that support them (e.g., MBC or care coordination).

Based on these five aims, the typical challenges outlined in the previous sub-section and a synthesis of the literature, this Conceptual Framework outlines highlights effective knowledge mobilisation and implementation as follows:

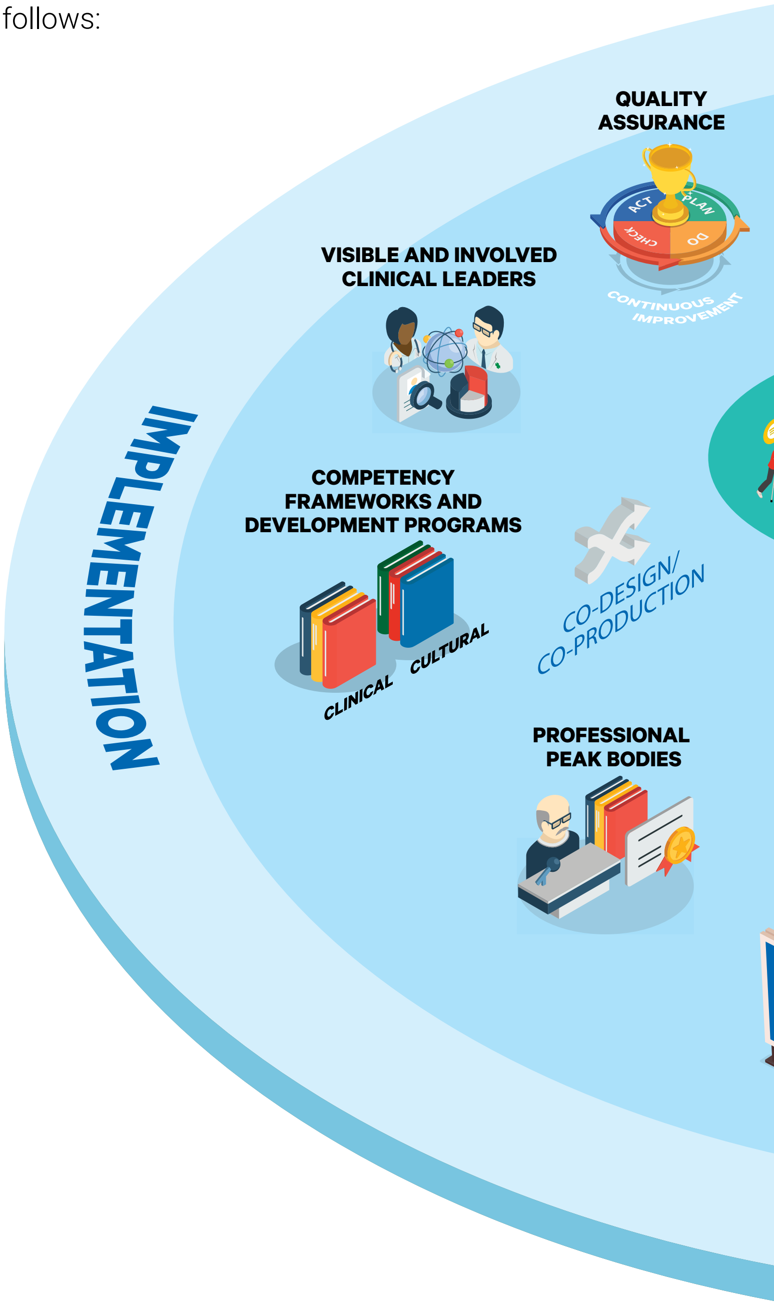


Figure 9: Six building blocks to effective knowledge mobilisation and

implementation within a system

Across this landscape, this Conceptual Framework recommends six building blocks to effective knowledge mobilisation and implementation within a system:

1. Nurturing leadership
2. Maximising collaboration
3. Addressing inequity
4. Building capacity and capability
5. Integrating adaptability
6. Using data and feedback to sustain change

The exact nature of these six building blocks are outlined in further detail over the following pages, including for each: an outline of key approaches and priority areas of focus for knowledge mobilisation and implementation efforts, one or two case studies that illustrate how they have been applied in different settings to improve service outcomes, and a list of the key action areas for effective knowledge mobilisation and implementation.

6.4.1 Nurturing leadership

Leadership, both formal and informal is an important element of effective knowledge mobilisation and implementation (Gregory A. Aarons, Ehrhart, Farahnak, & Hurlburt, 2015; Chinman et al., 2017; J. M. Cook et al., 2015; Flodgren et al., 2019).

Building and maintaining an integrated and evidence-based system of care for Veterans and their families involves working with multiple sectors and service systems and their leadership structures. In this context, it is challenging to have influence and foster collaboration when there is not one single point of influence or decision-making but several (Holmes et al., 2017). Implementation facilitation and knowledge brokerage models can help provide both local and sector spanning leadership and coordination when introducing new systems or EBPs.

6.4.1.1 LEADERSHIP FROM POLICY MAKERS AND FUNDERS

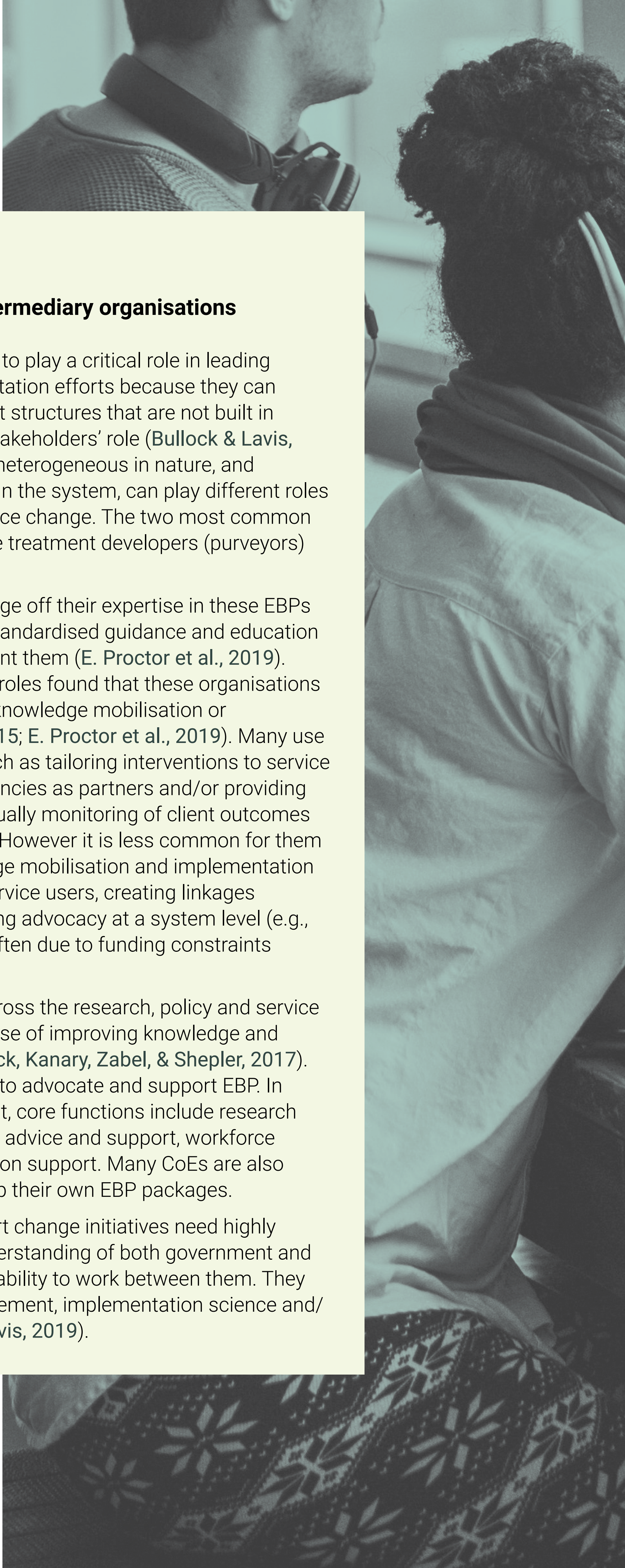
Implementation and knowledge translation research tends to focus on leadership at a network or organisational level. However, many scholars note the importance of leadership provided by policy makers and funders, with organisations and professional groups' priorities strongly influenced by policy directions and resourcing (G. A. Aarons et al., 2016; Fagan et al., 2019; Byron J Powell et al., 2016). To embed change, commitment from policy makers needs to extend beyond supporting the approach to care that is to be implemented (e.g., through funding model supporting the approach or use of incentives targeted at EBP), to also building-in ongoing knowledge mobilisation and implementation infrastructure. To support this, government decision makers would benefit from resources or advocacy on what is required for sustained adoption of a new model of care.

6.4.1.2 INTERMEDIARY ORGANISATION, KNOWLEDGE BROKERS AND IMPLEMENTATION FACILITATORS

Intermediary organisations, knowledge brokers and implementation facilitators often play a pivotal role in advocating for and supporting system change. Many successful knowledge mobilisation and implementation initiatives rely on intermediary organisations or knowledge brokers to facilitate and coordinate change across complex systems (Byron J Powell et al., 2016; Resnick & Hoff, 2019). They may include organisations that have tested and packaged EBPs (purveyors), research institutes that focus on translation, non-governmental service providers or government agencies that deliver services or act as regulators (Bullock & Lavis, 2019; Fagan et al., 2019).

These organisations often act as a bridge between researchers, government decision makers, clinical leaders and the community. Many experts stress that this ability to form and lead partnerships amongst stakeholder groups is key to being an effective intermediary in an implementation context, but note that funding and role constraints can undermine this ability (Fagan et al., 2019). Others have argued that the position of an intermediary organisation in the service system and policy landscape is critical to its success. In other words, an intermediary needs to be in a position where it can influence key decision makers and/or processes (Bullock & Lavis, 2019). For example, in a largely publicly funded system, a regulatory agency may have more of a role in mediating change and improving practice while an NGO or academic centre may be better placed to do this when services are a mix of privately and publicly funded agencies. Ensuring that the right intermediary organisation is leading the implementation of an EBP or system of care and is resourced to effectively form partnerships is critical to successful and sustained practice change.

Intermediary organisations provide leadership and coordination around knowledge synthesis and information exchange and facilitate a shared approach to the planning, roll-out and evaluation of implementation efforts. Many implementation approaches rely on facilitation by an intermediary organisation or a dedicated team or implementation facilitator within a service system to provide direction and continuity for service improvements, as well as technical or expert support. For example, many strategies clustering around an implementation facilitation were identified by experts consulted through a Delphi to develop a comprehensive list and taxonomy of key implementation strategies (ERIC - Perry et al., 2019; B. J. Powell et al., 2015).



SPOTLIGHT

The role and competencies for intermediary organisations

Intermediary organisations have come to play a critical role in leading knowledge mobilisation and implementation efforts because they can provide technical expertise and support structures that are not built in service systems or not part of policy stakeholders’ role (Bullock & Lavis, 2019). Intermediary organisations are heterogeneous in nature, and depending on their capacity and place in the system, can play different roles in advocating for and supporting practice change. The two most common types of intermediary organisations are treatment developers (purveyors) and centres of excellence (CoEs):

- Purveyors develop EBPs and leverage off their expertise in these EBPs to disseminate them. Many have standardised guidance and education packages that they use to implement them (E. Proctor et al., 2019). Reviews of purveyor practices and roles found that these organisations do not have a shared approach to knowledge mobilisation or implementation (Franks & Bory, 2015; E. Proctor et al., 2019). Many use core implementation strategies such as tailoring interventions to service system need, engaging service agencies as partners and/or providing a quality assurance framework (usually monitoring of client outcomes and fidelity) (Franks & Bory, 2015). However it is less common for them to engage in other crucial knowledge mobilisation and implementation activities such as engaging with service users, creating linkages between organisations and providing advocacy at a system level (e.g., funding/policy advocacy). This is often due to funding constraints (Fagan et al., 2019).
- CoEs are specifically designed to cross the research, policy and service divide and are funded for the purpose of improving knowledge and practice in a specialist area (Mettrick, Kanary, Zabel, & Shepler, 2017). They usually work across systems to advocate and support EBP. In addition to partnership engagement, core functions include research and evaluation, policy development advice and support, workforce capacity building and implementation support. Many CoEs are also purveyor organisations that develop their own EBP packages.

Intermediary organisations that support change initiatives need highly skilled staff with a comprehensive understanding of both government and service delivery environments and the ability to work between them. They also require expertise in quality improvement, implementation science and/or knowledge translation (Bullock & Lavis, 2019).

SPOTLIGHT

The role and competencies for intermediary organisations

Twelve core competencies across three main facilitation functions have been proposed for staff charged with supporting implementation (Metz, Louison, Ward, & Burke, 2017):

1. **Facilitate active involvement of stakeholders through the production and implementation process:**
    a. Co-learning: ability to collaborate with systems stakeholders to understand their needs.
    b. Brokering: ability to facilitate knowledge exchange between stakeholders, and co-design required resources and approaches.
    c. Addressing power differentials: ability to build trust and two-way communication.
    d. Co-design: ability to develop tools, resources and models in collaboration with partners.
    e. Tailored support: ability to provide implementation support tailored to the needs, goals and context of stakeholders.

2. **Facilitate ongoing improvement throughout the implementation process:**
    a. Assessing need and context: understand the needs of the target population and the contextual fit of interventions.
    b. Applying and integrating implementation science approaches: use systems thinking, participatory methods, and knowledge management and exchange.
    c. Conducting improvement cycles: the ability to facilitate the use of data to examine and improve implementation processes.

3. **Facilitate sustained practice change:**
    a. Growing and sustaining relationships with stakeholders.
    b. Building stakeholder capacity: ability to provide training and support.
    c. Cultivating leadership.
    d. Engaging in participatory problem solving and providing support that builds on stakeholder knowledge and experience.

6.4.1.3 CENTRALISED AND DISTRIBUTED LEADERSHIP

To foster a shared vision and ensure that there is leadership support for improved care, it is important to engage with different levels of leadership within the health system and ensure that all leaders have the capacity to facilitate implementation. Researchers investigating system level change have pointed to the equal importance of centralised and distributed, or local, leadership (A. Best et al., 2012). They noted that while there needed to be centralised leadership to ensure that all involved in implementation efforts had consistent goals, a shared vision and access to adequate resources to implement change, leadership at a local level was required to provide guidance about how to best adapt interventions to local need (Holmes et al., 2017). In fact, simply relying on a top-down approach to drive change can lead to low levels of adoption. For example, during the evaluation of the implementation of measurement-based care (MBC) across mental health sites in the US Department of Veteran Affairs, researchers noted that low uptake of the new practice was in part due to perceptions that implementation was pushed by the top leadership and that local managers had not been sufficiently resourced to truly facilitate change (Resnick & Hoff, 2019). In another study looking at the implementation of cognitive therapy across a network of community services, collaboration between local service leaders coupled with centralised guidance and facilitation provided by a project lead and academic experts was critical to success (Wiltsey Stirman, Matza, et al., 2015).

6.4.1.4 FORMAL AND INFORMAL LEADERSHIP

At a local level, both formal and informal leadership can be harnessed to promote the use of EBPs. In organisations, leaders that actively facilitate implementation efforts by providing a vision for change, encouragement as well as processes to facilitate and reward change in practice have had a demonstrably positive impact on both initial and sustained adoption of recommended practices (G. A. Aarons et al., 2016; Gregory A Aarons & Sommerfeld, 2012). Informal opinion leaders can also play an important role in championing change and facilitating collaboration, although their role has been ill defined in the literature (Flodgren et al., 2019).

From the outset of an implementation process, it is important to engage organisational leaders, understand their leadership style and give them the tools to take a facilitative approach to change. It is equally important to understand who the potential opinion leaders are in a service system and to engage them in supporting implementation efforts. Their role and impact should also be evaluated to better understand how they can contribute to both the initial uptake and continued use of EBPs in their organisation and/or network.

6.4.1.5 FOSTERING LEADERSHIP CAPABILITY

Leadership styles and capabilities required to support change in practice and sustained implementation have been examined for many years, and training programs and leadership measures have been developed to support the promotion of EBPs and a positive implementation climate (Gregory A. Aarons et al., 2015; Gregory A Aarons & Sommerfeld, 2012; A. Best et al., 2012). As outlined earlier, a number of leadership capabilities have been linked to good implementation including leaders' own knowledge and readiness to adopt EBPs or support system change, their capacity to provide feedback and rewards with regard to the use of the recommended practice, as well as their capacity to inspire their staff and role model managing change. An aspect of leadership capability that is less well researched or understood but equally important is the ability to collaborate with other levels of leadership, nurture relationships and mentor emerging leaders (A. Best et al., 2012). As mentioned previously, given that improvements in the Veteran health system involves many sectors and types of leadership, including community leaders, opinion leaders and experts across multiple disciplines, the ability to work collaboratively across boundaries and draw on the influence, leadership skills and expertise of others in the system is an important ability in implementation leadership.

KEY ACTION AREAS

1. Engage with government decision makers so policy directions and resourcing support implementation of best practice. Engagement needs to involve discussions about the system or intervention that requires implementation but more importantly, required resources and guidance for effective and sustained knowledge mobilisation and implementation efforts.
2. Support intermediary organisations and knowledge brokers to provide implementation leadership and facilitation. The type of leadership provided should be based on an organisation's place in the service system. Intermediary organisations should be resourced to foster partnerships between health providers, researchers and the community in a sustainable manner.
3. Support implementation efforts across all levels of leadership. This includes centralised leadership to support a shared vision and provide program continuity, as well as effective resourcing and local leadership to provide day-to-day guidance. In complex systems, top-down approaches to implementation are not recommended. Local leadership needs to be resourced and supported to ensure that interventions are adapted to local needs.
4. Engage both formal and informal leaders in mobilising knowledge and changing practice. Informal leaders such as opinion leaders or community leaders should be, wherever possible, engaged in supporting change and quality improvements. Organisational leaders need to be resourced to support implementation efforts from the start so that they can foster organisational readiness and early adoption, and over time to champion EBP sustainment.
5. Foster leadership capability for promoting practice improvement and the implementation of innovations. More research needs to be done to address this critical aspect of system change and implementation support.

6.4.2 Maximising collaboration

The artificial divide between knowledge producer and knowledge recipient has led to many years passing before research evidence is embedded into practice, but more importantly, disconnection between knowledge creation and use has often resulted in interventions being developed without an understanding of the context in which they will be delivered (L. Green, 2008; Holmes et al., 2017; Shelton et al., 2018).

6.4.2.1 KNOWLEDGE CO-PRODUCTION TO ENHANCE DISSEMINATION AND IMPLEMENTATION OUTCOMES

There is often a misconception that an optimal and effective intervention can be developed and tested independently of the service environment in which clients and practitioners operate. In this view, failure to adopt new practices is perceived as either resistance or as a service-related problem that can be overcome by investment of additional resources (Chambers et al., 2013). Some experts argue that implementation and dissemination can be considerably more effective when practitioners and clients are engaged early in efficacy or implementation research (Allan Best & Holmes, 2010; Chambers et al., 2013; L. Green, 2008).

Participatory research models and practice evaluation can be particularly useful in identifying how systems and service environments shape practitioner behaviour and the way in which communities access and utilise support. They also provide research designs that involve close collaboration with practitioners and clients. This can help establish ongoing partnerships for service system improvements (A. Best et al., 2012). However, the evidence for how effective research-practitioner partnerships are in promoting the sustained use of EBPs remains unclear.

In Veteran mental health, partnerships between researchers, service providers and community leaders can ensure that cultural and structural issues specific to military service and Veteran communities are taken into account when developing interventions, disseminating evidence and implementing systems of care. For example, the sense of being a separate community with a strong sense of identity and connection may impact on how Veterans engage with civilian service systems and mental health information.

6.4.2.2 COLLABORATION AND CO-DESIGN IN IMPLEMENTATION

Engaging a wide range of stakeholders and adopting a collaborative approach is important in maintaining sustained EBP adoption (Damschroder et al., 2009; A. E. Green et al., 2016).

Stakeholder feedback in evaluations of implementation programs indicate that ongoing collaboration between treatment developers, knowledge brokers or implementation facilitators and service leadership was critical to promoting uptake and maintaining adoption (Rinad S Beidas et al., 2016; Wiltsey Stirman et al., 2012).

A quantitative and qualitative evaluation of the role of collaboration in public-private partnerships in 11 child welfare systems has similarly attested to the importance of effective collaboration in EBP sustainment (A. E. Green et al., 2016). The study found that sites with high levels of collaboration were more likely to maintain adoption and program fidelity. It also stressed the importance of the role of implementation facilitators in effective implementation, particularly their ability to facilitate change in a collaborative, non-directive manner and the challenge of maintaining partnerships over time.

Similarly, service administrators and trainers in a multi-agency implementation of cognitive therapy saw inter-agency collaboration and the partnership with academic experts as the key to successful implementation (Wiltsey Stirman et al., 2012). They noted that academic experts' willingness to partner with service leaders to adapt training and interventions to the services' needs and the learnings shared across agencies were particularly important.

CASE STUDY

Promoting collaboration between researchers and practitioners

The US VA's Quality Enhancement Research Initiative (QUERI) aims to facilitate partnerships between funders, researchers and practitioners. It achieves this by supporting evaluation, practice improvement and implementation research partnerships, as well as by providing training and implementation tools. It has contributed to a significant increase in implementation programs and knowledge across the US VA.

QUERI aims to: (a) facilitate rapid translation of research knowledge and evidence-based treatments into clinical practice; (b) increase the impact of research findings through bidirectional partnerships, rigorous evaluation and communication; and (c) make VA a national leader in promoting a learning health care organisation through innovative implementation science.

The following factors contribute to the success of QUERI as a key driver of EBP implementation:

- QUERI offers an infrastructure that brings practice and research together, promoting funding models that support this approach long-term (rather than simply the initial research studies).
- QUERI is characterised by clearly articulated aims and a strategic plan designed to promote sustainability of EBPs that address key healthcare issues for Veterans. The strategic plan is linked to the VA core business goals of implementing EBPs, improving measurement and reporting for process improvement, providing training and educational resources for evaluation and implementation efforts, and tailoring QI strategies to local needs.

The core aim of QUERI is to support two-way partnerships between researchers and treatment services that are embedded in VA QI initiatives. Examples include:

- The Peers in PACT (Patient Aligned Care Teams) project, which evaluated the use of external facilitation to support implementation of peer specialists in VA primary care teams: in 2017, peer specialists delivered 11,000 encounters to 4,247 Veterans across 25 VA sites.
- Development of a measurement-based care (MBC) implementation guide, based on key informant interviews, to support implementation of MBC in diverse mental health settings within an overall quality improvement framework, while ensuring consistency with local context and accreditation requirements.

CASE STUDY

Engaging service users in co-production

The Ontario Centre of Excellence for Child and Youth Mental Health (Ontario CECYMH) was established to share knowledge, build capacity and create the connections needed to improve mental health care for children, youth and families. The Centre places the highest priority on engaging youth and families as collaborative decision makers in all of their work. By modelling this active engagement of their target population as "co-producers", they function as a powerful example for clinical services in child and youth mental health when it comes to forming effective partnerships with service users.

Quality standards for engagement and collaboration:

In order to create a shared understanding of best practice principles in partner engagement, the Centre worked with youth, families, clinicians and researchers to create quality standards for engagement with service users. Although they have produced separate standards for youth and families, the core principles overlap. They include:

- Co-development: Youth and families are actively involved in the development of all projects, services, processes and system improvements; they are essential collaborative partners in the decision-making process.
- Commitment: All partners are committed to youth and family engagement; the system leadership is accountable for embedding this commitment in system planning and improvement efforts.
- Communication: Engagement is only effective if all communication among partners is timely, transparent, respectful and accessible.
- Diversity and inclusion: Youth and family engagement practices are inclusive; the diversity of partners is valued and engagement is representative of the communities served.
- Ongoing learning: All partners, including youth and families, have a shared understanding of the philosophy and practice of engagement, and have accessible learning opportunities to increase knowledge and skills in youth and family engagement.
- Research and evaluation: Youth, families and other partners jointly research, evaluate and make ongoing improvements in engagement practices, processes and all aspects of system planning..

The family standards have an additional principle about empowerment, while the draft youth standards have additional principles relating to accessibility, authentic relationships and safer spaces.

The partner engagement principles are backed by measurement strategies to track the progress and impact of the practices.

6.4.2.3 ENGAGING WITH THE VETERANS COMMUNITY IN SERVICE IMPROVEMENT

Consistent with patient-centred care principles, the planning and review of services requires active collaboration with service users. This has been outlined in detail previously in this Conceptual Framework. In addition, implementation researchers have called for more attention to be paid to the role of service users' decision making in the sustained adoption of EBPs, leading to a growing number of studies examining the role of decision-aids in implementation (Finnerty et al., 2019; Watts et al., 2015). Despite this, practice improvement programs aimed at Veterans do not often consider the role service user choice and advocacy plays in adoption of new practices.

Projects aimed at engaging the Veteran community in accessing evidence-based care are often separate from interventions aimed at improving systems of care or practitioners' uptake of EBPs (e.g., through large knowledge dissemination and community education projects or discrete research projects aimed at improving client-practitioner joint decision making). For this framework to be implemented effectively, strategies to support Veterans and families' choices need to be integrated within comprehensive implementation. These strategies need to be co-developed with representative members of the community.

KEY ACTION AREAS

1. Actively involve practitioners and clients in the planning and design of efficacy and implementation research in order to facilitate effective dissemination and implementation of new approaches.
2. Include participatory research models and practice evaluation in research priorities. These types of research help identify how systems and service environments shape practitioner behaviour and the way in which communities' access and utilise support. Whenever possible, they should be used as an opportunity to form partnerships for future dissemination and implementation efforts.
3. Foster collaboration between treatment developers, knowledge brokers and service leaders to promote uptake and maintain adoption. Implementation programs need to include system designs and processes that encourage collaboration to adapt the implementation of EBPs to service needs, non-directive brokering of implementation by experts and/or trainers, and inter-agency partnerships.
4. Ensure implementation programs and the information about services and EBPs are informed by the needs and knowledge of Veterans. It is important that service-users be given a clear role in developing products and/or services.

Developing information materials and implementation programs in a truly collaborative manner with the Veteran community ensures that service users are part of the solution and are actively promoting the use of EBPs.

This also ensures that the barriers experienced by the Veterans and their families when accessing information or care are addressed. As stated earlier, simply relying on having service-user representatives on committees and reference groups may not be sufficient. Service-users need to be given a clear role in developing and reviewing knowledge products and/or service design and work as a team with service providers and those facilitating knowledge mobilisation and implementation projects. Using process and outcome data collected from service users to inform this collaborative process is also critical (see related building block) (Hall et al., 2018).

Finally, given that families can have a significant influence in problem identification, treatment choice and engagement (e.g., Goetter et al., 2015), it is important to work with family in developing information and programs that assist them in getting support and helping Veterans engage in evidence-based care. Numerous knowledge mobilisation programs have been funded in Canada, Australia and the US, but the level of collaboration with families in these programs is varied and their impact on the uptake of evidence-based care has not been assessed. The role of engaging families needs to be understood much better in order to develop effective collaboration mechanisms.

6.4.3 Addressing inequity

Knowledge mobilisation and implementation play a critical role in ensuring that research agendas, knowledge sharing and service improvements address health inequities experienced by some members of the Veteran community.

The Veteran community is heterogeneous (as outlined earlier in this Conceptual Framework), however many models in knowledge mobilisation and implementation do not fully articulate how to improve access to care for Veterans who experience additional barriers because of their gender, culture, sexual orientation, ethnicity and religion, disability status or experiences of social disadvantage. For example, recent government funded reviews of institutional abuse in Australia and research regarding military sexual violence in the US have pointed to increased vulnerability associated with women being a minority in the military (Orchowski, Berry-Caban, Prisock, Borsari, & Kazemi, 2018). Recent Australian research also identified that Veterans who had experienced recent homelessness or were at risk of homelessness were a particularly vulnerable group, and by virtue of their homelessness have greater difficulties accessing care and supports (Hilferty et al., 2019). However little is known about what these vulnerabilities mean in the context of designing and implementing prevention and treatment programs.

Understanding who has decision-making power when setting priorities for research, program design and implementation is an important consideration (e.g., Masuda, Zupancic, Crighton, Muhajarine, & Phipps, 2014). That is, rather than mobilising and disseminating what is known, a process is needed for understanding and shifting how it is known so that the knowledge is properly representative. Recognition of all perspectives is critical and requires an inclusive approach, that is transparent, open and flexible, particularly in terms of prioritising the input of those most marginalised/unheard. To be inclusive, power must be acknowledged and identified, and the target population should be considered experts because of their experience and understanding. Thus a key way of addressing issues of power and representation is to ensure that the population of interest, including representatives from minorities within it, are involved in all stages of research, program design and roll-out.

6.4.3.1 Including all Veteran voices: the role of representation and data in health outcomes

Knowledge to better address health inequities, knowledge mobilisation and implementation programs should aim to:

1. Assist in shaping who in the health system has the power to set research and implementation priorities;
2. Ensure that priorities are not defined by dominant narratives of knowledge that exclude certain groups or populations, i.e., challenge assumptions about what health knowledge is legitimate; and
3. Ensure that the needs and structural barriers experienced by those in the Veteran community who experience health inequities inform implementation design.

To meet those aims, it is important first of all to ensure that stakeholder engagement across the Veteran community is designed in such a way that marginalised and vulnerable community members are included (Davison, Ndumbe-Eyoh, & Clement, 2015).There should also be a sound understanding of the needs of disadvantaged communities, with data collection infrastructure that allows government decision makers, policy actors, researchers and services to set priorities informed by health inequities. To address these, the following should occur:

- Veteran community representatives from all groups, including those that experience disadvantage (e.g., homelessness) and/or are in the minority (e.g., women) are consulted to establish how they perceive the relevance and accessibility of programs or information packages.
- Use of participatory design processes for research and evaluation of implementation efforts is a particularly powerful way of including the voice of disadvantaged or underrepresented groups.
- When consulting with Veteran community representatives, all groups should be represented, i.e., do not rely on community leaders that represent only the majority or a vested interest.
- To truly engage advocates from disadvantaged backgrounds in design and consultation processes, address structural and cultural barriers to participation. For example, ensure that partners these advocates engage with have cultural competencies or that consultation structures are inclusive (e.g., one-to-one consultation vs group consultations).
- A systematic approach is used to identify the needs of all across the different Veteran communities when developing implementation programs.

The social determinants of health inequalities have been studied for years, with several models developed (e.g., Marmot, 2005). These models consider the role of social factors such as economic position, social support and employment status, in influencing health outcomes. A model such as Marmot et al.'s should be used to identify implementation priorities, with both priorities and outcomes of implementation informed by an equity lens. In practice this means identifying where there is an underrepresentation of vulnerable groups in evidence and knowledge production (e.g., clinical trial samples), and actively engaging those groups in the development and implementation of interventions and service systems. This ensures that issues relevant to their specific contexts are at the forefront of system design and implementation.

A key element in addressing underrepresentation is data. Data infrastructure should be designed to support the identification of health inequities. Advocacy for collection of integrated data on indicators of disadvantage and/or social determinants of health outcomes across health systems is an important foundation of equity-based knowledge mobilisation and implementation. For example, IAPT implementation evaluation and monitoring have linked clinical outcome data to regional social deprivation scores (David M Clark, 2018).

SPOTLIGHT

Using purposive data collection and reporting to target health inequities

There are many challenges in having population based data collection and reporting that help understand health inequities and prioritise interventions. In particular, researchers in Canada have identified the following issues (Dyck, Snelling, Morrison, Haworth-Brockman, & Atkinson, 2018):

- The need for agreement on and inclusion of indicators that support health equity assessment in routine administrative data collections. For example, inclusion of sociodemographic and economic indicators such as ethnicity, employment, education and income within administrative health data collections would allow for the assessment of health status differences between populations over time. Further, collections of this type would allow for an analysis of the effects of interventions to address health inequities.
- Inadequate collection of data from minority or marginalised groups further impedes the ability to properly identity health inequities. For example, Indigenous status has only relatively recently been included in routine data collections internationally (since the 1970's in Australia). A further issue is the lack of representation of these populations in the identification of culturally appropriate indicators, and the design and collection of data.
- Routine data collections, even where they do capture appropriate indicators, are often only analysed in the form of technical reports prepared by and for 'experts'. This neglects the broader engagement of minority and marginalised groups, further reinforcing power and control differences that contribute to inequity.
  A value-driven, collaborative process which prioritises these groups, giving them ownership and control of their information and how it is used, is one way of overcoming these challenges.

Dyck et al. (2018) developed a framework that aims to establish purposive population health reporting based on social determinants of health. This framework puts equity and knowledge mobilisation at the core of population health surveillance and reporting by applying a health equity lens to the entire process. Data and reporting requirements make it easier to identify social determinants of health such as ethnicity or socioeconomic status. Having an active and collaborative focus to reporting means that:

- It is done with an explicit mandate to use information to prioritise interventions that target health inequities.
- It uses a collaborative approach between the public health sector, government, community partners and researchers at all stages.

Utilising this framework ensures that the collection, use and reporting of health data appropriately represents, engages and prioritises the needs of populations experiencing health inequities.

The following case study illustrates some of the data-related challenges that need to be overcome in order to take an equity informed approach to system improvements. It also presents an attempt at developing a data reporting framework that focuses on equity.

6.4.3.2 INCLUDING EQUITY IN THE DESIGN AND EVALUATION OF KNOWLEDGE MOBILISATION AND IMPLEMENTATION PROGRAMS

As highlighted above, systemic attention to inequities needs to be integrated into all levels of knowledge mobilisation and implementation processes, including policy advocacy, research-practice partnerships, capacity building and evaluation of implementation programs (Kirmayer & Jarvis, 2019). This means that:

- The implementation of new programs and the design of information strategies are informed by:
    - A strong understanding of barriers experienced by Veteran community members no matter what their background. This includes paying particular attention to political, economic and other systemic factors that will impact on sections of the Veteran community. This will be done through collaboration and co-production as described in previous sections.
    - An analysis of the organisation's capacity to engage with and support populations more likely to experience health inequities (e.g., structural barriers such as outreach capacity or intake processes or competency barriers such as lack of cultural awareness).
    - An explicit commitment to equity outcomes, not just general clinical and quality outcomes. For example, that the reach and sustainability of an intervention includes uptake by particularly hard to reach or disadvantaged groups.
      This means that evaluation of implementation programs include indicators such as the percentage of homeless Veterans receiving an EBP.

KEY ACTION AREAS

1. Incorporate drivers of inequities when designing knowledge mobilisation and implementation strategies, including policy advocacy, research-practice partnerships, capacity building and evaluation of implementation programs.
2. Establish data collection infrastructure and reporting so government decision makers, policy actors, researchers and services can set priorities informed by health inequities.
3. Take a broadly inclusive approach to defining knowledge and research priorities, and recognise non-traditional sources of knowledge.
4. Include the voices of Veterans and their families, including underrepresented groups among them, in all aspects of research, program design and roll-out.
5. Ensure the design of stakeholder engagement across the Veteran community includes marginalised and vulnerable people by understanding the barriers and facilitators to access to effective care for those in the Veteran community that experience more vulnerability or are underrepresented because of their minority status.

- Implementation strategies are selected to maximise equitable access to health care. For example, community health workers (CHW) have been deployed in many countries to act as gateways to more traditional health infrastructure and to help increase access to health care. However, researchers have noted that when CHW programs are not implemented with a specific focus on equity, they do not necessarily engage with more vulnerable and marginalised populations (McCollum, Gomez, Theobald, & Taegtmeyer, 2016). Implementation strategies such as workforce capacity development that include an equity focus, equity-based recruitment approaches (e.g., selecting workers from socially disadvantaged communities), and explicit and well-supported linkages between CHWs, communities and others health services are crucial to addressing health inequities.
- The cost analysis of implementation includes consideration of discrepancies in terms of costs and benefits for different groups. For example, while the cost of implementing a service that addresses the specific needs of minority groups may be greater, the flow-on social and economic benefits may also be greater.
- Identifying strategies to increase inter-sectoral communication is critical. From an implementation perspective, focusing on improving how one sector uses an intervention is not only ineffective but can also reinforce inequities. However, in their review of knowledge to action frameworks against key equity support characteristics, Davison et al. (2015) identified that communication between sectors was a missing element in most.

6.4.4 Building capacity and capability

Practitioners, providers, organisations and peer supporters at all levels of the service system need to have the capacity to conduct recommended assessments, make informed decisions about care planning and deliver evidence-based treatments in order for the stepped / matched model to be implemented.

Capacity development usually involves ensuring that providers not only have the knowledge and skills to deliver the service as intended, but also the attitudes that are core to the service delivery model (e.g., client-centered values) (Australian Government Department of Health, 2013).

In implementation science, attitudes about self-efficacy, change and evidence-based practice have been particularly important factors that have been targeted through training and development (Couineau & Forbes, 2011; Damschroder et al., 2009; J.I. Ruzek & Rosen, 2009).

6.4.4.1 TRAINING ALIGNED WITH CONTEXTUAL NEEDS, CULTURE AND CLIMATE

Capacity building in the context of large scale implementation can be complex and requires that specific attention is paid to the context in which it is delivered.

The development of capacity building programs need to consider the knowledge and skill needs of practitioners as well as available organisational resources, climate and culture (Chambers et al., 2013). Training and support will have little impact in an organisation or service system that has limited resources to support the delivery of the EBP (e.g., the funding model does not support the delivery as intended, or staff are not resourced to maintain basic professional requirements).

Similarly, if the climate of an organisation is such that its staff experience high levels of stress, low work satisfaction, or if there is high turn-over, capacity building may lead to limited implementation (Gregory A Aarons & Sommerfeld, 2012; Rinad S Beidas et al., 2016;

Woltmann et al., 2008). To maximise retention, it is important that a culture of support exists across clinical teams to protect the psychological wellbeing of staff; again, the role of leadership in promoting that culture is crucial. Burnout and compassion fatigue are an occupational risk when working with highly traumatic material in posttraumatic mental health settings, and many staff report stress associated with organisational factors such as a perceived lack of control over work and high administrative demands (Garcia, Benzer, Haro, & Finley, 2018). Capacity building efforts should be cognisant of, and help bolster, a supportive culture and leadership and be integrated with existing staff wellbeing strategies (e.g., reflective practice approaches or easy access to confidential professional support).

Organisational and team culture also need to be considered, particularly with regard to mission, attitudes towards change and the value of research evidence. As noted in the previous section, interventions to build the capability of organisational leadership to support a culture of openness to change and implementation have been found to have an impact on adoption (Gregory A. Aarons et al., 2015).

6.4.4.2 TRAINING NECESSARY BUT LIMITED AS A SINGLE IMPLEMENTATION INTERVENTION

For many years, knowledge mobilisation and implementation researchers have found that stand alone capacity building programs such as training workshops or self-directed training through reading or online learning have had a limited impact on practitioner behaviour, including initial adoption of a new practice (Herschell, Kolko, Baumann, & Davis, 2010; Pedersen et al., 2018). Programs have therefore tended to include training augmented by ongoing consultation and supervision for more complex clinical interventions (J. Cook et al., 2013; Edmunds et al., 2014) or by clinical decision aids or reminders (Forman-Hoffman et al., 2017; Prior et al., 2008).

The outcomes for programs that have provided ongoing support following initial training have been mixed. For example, programs aimed at implementing effective PTSD treatments for Veterans have led to good client outcomes (Eftekhari et al., 2013; Lloyd et al., 2014) and an increase in positive attitudes towards using recommended practice (Josef I Ruzek et al., 2016). In contrast, other mental health researchers examining the outcomes of training and consultations have noted that the impact on practitioner attitudes to EBPs was uneven and generally not maintained (Rinad S Beidas et al., 2016; Edmunds et al., 2014). One of these studies found that the training and consultation model nonetheless contributed to an increase in the number of practitioners using EBPs and in clients being identified for treatment and receiving effective interventions (Rinad S Beidas et al., 2016). It is important to note, however, that this initiative included other implementation interventions, including extensive stakeholder and community engagement, the use of incentive payments and adapting the training content to the needs of providers. In fact, researchers evaluating large capacity building efforts in the US Veterans Affairs system have noted that outcomes for these programs have been limited by the lack of measures that address organisational and systemic factors (Craig S. Rosen et al., 2017). As noted earlier, while these training programs led to good client outcomes and early adoption, they did not lead to EBPs being offered to a large number of clients, even in specialist clinics (J. Cook et al., 2013; Craig S. Rosen et al., 2017).

6.4.4.3 CREATING NETWORKS OF EXCELLENCE

One of the difficulties in building capacity is ensuring that a learning culture is created and that organisations continue to champion EBPs once training and support programs are completed. For example, the national training programs to support EBPs for treating PTSD in the VA found it difficult to engage clinicians in completing the training program or championing the EPB, with less than 8% completing case consultation requirements and less than 2% becoming national trainers (J. Cook et al., 2013). Similar low levels of engagement

CASE STUDY

Standard training vs learning collaborative

Although learning collaboratives (LCs) are used widely to promote evidence-based practice, limited research has explored their effectiveness, and models vary widely in their structure. To address these issues, Nadeem et al. (2016) conducted a pilot study comparing implementation outcomes: an LC model + clinical skills training was compared with the clinical skills training alone.

The LC model was based on the Institute for Healthcare Improvement's Breakthrough Series Collaborative model, which emphasises ongoing data collection and analysis to identify problems and drive continuous learning and improvement. This training was part of a well-established, evidence-based clinical skills training program in CBT for youth mental health workers in New York State.

Compared to providers who received the standard clinical skills training alone, those who also participated in the LC were more highly engaged in the skills training program, were more likely to complete requirements, and evidenced higher adoption of outcomes.

Features associated with success included:

- Expectations of each LC were clearly articulated: 1) To establish a multidisciplinary team with a strong internal capacity for QI; 2) To use local qualitative and quantitative data to drive improvements and promote accountability; 3) To build interagency networks through cross-site learning.
- The LC structure and function were developed collaboratively. The multidisciplinary QI team consulted with content experts to develop specific goals, targets and strategies, and to develop data monitoring systems, prior to launching the LC. These consultations enabled the team to prioritise feasibility (i.e., to develop a model that was feasible for their specific sector and resource constraints) and focus (i.e., a model that targeted their specific QI and implementation needs).
- The LC provided a strong focus on QI knowledge and capability. Each team was asked to include a QI specialist and substantial support was provided by members of the research team with prior experience and training in QI and LCs. Individual consultations, support around data collection and routine progress feedback were provided to all sites.
- Standard LC and QI features were emphasised. As well as a pre-implementation phase, in-person learning sessions, and monthly cross-team phone calls, "action periods" between meetings provided teams with the opportunity to apply QI methods and use local data to identify and generate solutions to implementation challenges.

Although participants saw value in the QI focus, two challenges were identified:

- Most teams had no existing QI personnel; for many, the LC was the first time they had been required to formalise a QI role within a multidisciplinary team.
- The clinics had no data infrastructure that could be leveraged for the QI process and few resources to support their use of the basic data tracking systems, requiring additional support from the research team.

For LCs to be effective, data collection and feedback infrastructure and QI support for agencies that do not have existing QI trained staff or processes are important.

were noted by evaluators of the US Veteran Affairs MBC implementation with VA staff in champion facilities who had volunteered to lead implementation efforts not attending planning and learning meetings or not accessing many of the of the training tools developed to support them (e.g., webinars and video demonstrations) (Resnick & Hoff, 2019). Efforts to maintain internal expertise and champions are also often hampered by the high staff turn-over in mental health and welfare support services (Rinad S Beidas et al., 2016; Woltmann et al., 2008) making train-the-trainer models and the selection and focus on champions difficult to maintain.

Learning collaboratives (LCs) are a promising approach to fostering ongoing learning that have an emerging, although limited, evidence-base (Nadeem, Olin, Hill, Hoagwood, & Horwitz, 2013). They are derived from the concept of community of practice, a long standing approach to improving quality of care, which brings practitioners together around shared learning and service improvement goals. Adapted from quality improvement collaborative (QIC) models utilised in health care, LCs have become a popular model in mental health care for capacity building and ongoing support in large scale efforts to implement EBPs (Nadeem, Weiss, Olin, Hoagwood, & Horwitz, 2016; C. S. Rosen et al., 2004; Sigel, Benton, Lynch, & Kramer, 2013). LCs are a network of providers within an organisation or across a health system that collaborate and use ongoing data collection to identify learning needs and implementation targets for improved practice. They use an agreed outcome and data collection process to monitor the quality of their practice.

LCs typically involve individual sites that convene multi-disciplinary teams across geographical regions that partake in a series of face-to-face, phone and distance learning activities for an intensive consultation period (Cavaleri et al., 2006; Cavaleri et al., 2010; Hoover et al., 2018; Nadeem et al., 2016). Some LCs cross sector and organisational boundaries and are designed to strengthen cross-sectoral and inter-agency collaborations (Hanson et al., 2019). Teams participate in learning sessions facilitated by experts, with action periods taking place between learning sessions, to implement and evaluate the effectiveness of strategies and learnings from the sessions. Inherent to LCs is the focus on shared learning and collaboration among members both within and across services, providers and organisations, to facilitate evidence-based decision-making and high quality service delivery (Haine-Schlagel, Brookman-Frazee, Janis, & Gordon, 2013).

When building an effective stepped support system for the Veteran community it is important that a network of providers is resourced and committed to ongoing quality improvement and learning about a number of evidence-based interventions and military culture. Creating these “networks of excellence” based on current continuous improvement (QI) and LC models is an important step in ensuring that workforce capacity is maintained across key interventions and that there is an infrastructure and culture in place in which emerging interventions and clinical innovations can be implemented.

Such a network, like LC models, would need to include a specialist multidisciplinary team of clinicians and treatment providers committed to learning, data collection and meeting practice standards. At present, most studies of workforce capacity have provided evidence for models that focus on implementing single clinical interventions or problems (e.g., PE for PTSD) and little is known about the efficacy of learning communities and networks that commit to improving care for a specific population across multiple interventions and sectors. However, there is evidence that commitment to quality assurance mechanisms (including reflective practice through supervision, data collection, analysis, reporting and feedback to funders) that support continuous quality improvement amongst practitioners support good client outcomes and uptake of new practice.

For example, in the UK, the IAPT service that provides EBPs to people with mild to moderate anxiety or depressive disorders increased its workforce capacity through intensive training followed by session by session outcome monitoring and supervision to maintain high quality practice (outlined in more detail in section 6.4.6). Standards for practice and outcome monitoring were set, including reporting requirements. The program has been associated with good clinical outcomes and increased uptake of EBPs.

6.4.4.4 A PLANNED APPROACH TO WORKFORCE COMPETENCY DEVELOPMENT

Workforce development requires a coherent and strategic approach to its implementation across the service system, beginning with a framework that outlines the core competencies required of staff and/or contractors in different roles within a Veterans' health care service system.

An effective competency framework does not just outline clinical competencies, but also includes values and attitudes that promote client engagement and ethical behaviour. Importantly, they also need to include competencies that are crucial to effective implementation of EPBs, such as a commitment to evidence-based practice and MBC.

It is also important that service providers are incentivised to participate in capacity building programs and implement learnings in their day-to-day practice. As mentioned earlier, much of the literature on incentivisation is around monetary rewards and little is known about how peer recognition and professional standing influence implementation outcomes. However, ensuring that capacity building programs that promote EPBs in the Veteran mental health system are integrated with existing professional accreditation programs or are embedded in provider recognition programs such as credentialing or professional endorsement can help improve participation in workforce development and provide a framework for ongoing monitoring of practice and professional development.

In addition to those educational needs, workforce development should pay close attention to addressing the current and future career needs

KEY ACTION AREAS

1. Deliver capacity building programs with the context in which it is delivered in mind. Consider the knowledge and skill of practitioners as well as available organisational resources, climate and culture when developing training programs.
2. Integrate capacity building activities in multifaceted implementation programs. Standalone capacity building programs (training workshops or self-directed online learning) have a limited impact and need to be supplemented by other strategies that address contextual barriers and facilitators of implementation. Programs should not solely rely on strategies aimed at individual practitioners to embed learning (e.g., combining training with ongoing consultation and supervision (for complex clinical interventions), or clinical reminders (used primarily for less complex interventions such as medication prescription)).
3. Establish learning communities and networks of excellence that will continue to identify learning needs, monitor quality and improve practice. These practitioner networks need to be supported and resourced to continuously collect and use data to improve practice. Members of the network prioritise working with Veterans and their families and commit to ensuring providers and practitioners in the network build and maintain skills and competencies required of a multi-disciplinary workforce (clinical and cultural competence).

of individual staff. Ideally, line managers will have the skills to monitor these on a continuous basis, but that does not obviate the need for a formal performance appraisal and review process. While often considered as yet another administrative imposition, they should not be seen that way. Leaders have a crucial role to play in setting an example and in promoting a culture in which performance development is highly prized.

6.4.5 Integrating adaptability

Effective implementation needs to take into account how service systems as well as policy and funding environments change over time. An implementation process also needs to be able to respond to the inevitable adaptations to EBPs made by service providers over time (Chambers et al., 2013; Shelton et al., 2018).

6.4.5.1 SUSTAINING CHANGE AND HARNESSING EMERGENT SOLUTIONS

There are two common assumptions related to implementation that can impede stakeholder engagement with change and sustained adoption of recommended interventions.

The first assumption is that the context in which an intervention is implemented can be controlled in such a way that will result in increased adoption (Holmes et al., 2017). It is assumed that if the right information, training, directives or incentives are provided, practitioners and service users will embrace the intervention. This is what is often referred to as “push” factors by experts in system change (Fagan et al., 2019). Some implementation experts instead call for more focus to be put on how to foster emergent solutions. As explored in previous sections, providers and service users can contribute knowledge about what works in a service system and which supports can facilitate change. Simply consulting with providers and service users as recipients of a practice improvement process is not sufficient. They need to be involved as partners in change. Co-design and collaboration (see earlier building block) are therefore particularly important mechanisms for identifying and pursuing emergent solutions. The design of an implementation process needs to be co-produced by the group facilitating the implementation (this could be an organisation’s management, an intervention developer or an intermediary organisation) and representatives of all stakeholder groups in the service system. Collaboration across organisations and/or teams allows for problem-solving and learning from what has been trialed at different sites or by different individuals (Shelton et al., 2018; Wiltsey Stirman, Matza, et al., 2015).

The second potentially problematic assumption made by translation scholars is to think about sustainability solely in terms of outcomes and not as a process that requires constant adaptation (Chambers et al., 2013; Shelton et al., 2018). Increasingly, experts argue that the design and evaluation of implementation programs need to consider the dynamic nature of sustainment. In particular, Chambers et al. (2013) developed a model for implementation based on the premise that the way interventions are used will change over time. They reject the notion that sustaining implementation is about combatting program drift (i.e. decrease in fidelity). Instead they suggest that interventions can be optimised through the implementation process and that robust data collection and feedback need to inform how they are adjusted to fit their context. Conversely, systems and processes that support the continued use of the recommended practice can be adjusted overtime.

A continuous quality improvement approach where organisations use data to plan and assess improvements is a useful mechanism for monitoring the impact of adaptations and take a systematic approach to adjusting practices. A facilitated, planned approach to implementation which is based on an ongoing assessment of the context in which recommended practices are being embedded is included in most process implementation models (e.g., EPIS (Gregory A Aarons et al., 2011) or PRISM (Feldstein & Glasgow, 2008)) and recognised implementation strategies (e.g., ERIC's expert generated list of strategies) (Perry et al., 2019).

6.4.5.2 IMPROVING INTERVENTION FIT AND FIDELITY MEASUREMENT

As indicated previously, implementation studies have found that practitioners adapt EBPs in multiple ways (Craig S. Rosen et al., 2017; Wiltsey Stirman et al., 2012). Adaptations include only delivering parts of the intervention, adding other interventions or changing the timing and circumstances of delivery. The reasons for changing interventions are often unclear. While some tailor interventions in response to barriers and to improve the fit of an intervention to their service system (Chambers et al., 2013; Byron J. Powell et al., 2017), others may do so because they fall back into old habits, are poorly supported in using new practices or have unaddressed fears and assumptions

CASE STUDY

Using facilitation to assist late adopters in adapting practice and overcoming contextual barriers

A randomised controlled trial examined if providing facilitation that addressed contextual barriers to late adopters would lead to increased use of the recommended practice (A. M. Kilbourne et al., 2015).

The study was conducted in US VA clinics with the aim of embedding assertive outreach practices for Veterans with serious mental illness (SMI) who have ceased to access treatment. The study compared a standard implementation approach to a more intensive tailored facilitation approach.

The standard approach involved a) translation and dissemination of treatment materials into user-friendly language; b) structured training for providers; and c) brief technical assistance for providers focused on the technical aspects of program implementation.

The enhanced facilitation approach aimed to supplement the standard approach by assisting VA mental health service leadership and clinicians plan for, and adapt to, barriers to implementation. Based on the Promoting Action on Research Implementation in Health Services (PARiHS) framework, the program used a systematic and iterative process designed to build relationships with providers and to work with them in identifying and mitigating barriers to program adoption. The enhanced facilitation was associated with greater re-engagement of Veterans with SMI than the standard facilitation (A. M. Kilbourne et al., 2014; A. M. Kilbourne et al., 2015).

Key elements of the program's success were:

- Intensive facilitation designed to engage both service leaders and frontline providers. This included: a) weekly calls with local recovery coordinators to review progress and develop action plans to resolve barriers to implementation; and b) monthly calls to local mental health agencies and clinicians.
- A planned and collaborative approach to adapting to local needs and barriers. This was done through a needs assessment, engaging with regional leadership, identifying barriers, collective development of action plans, and feedback and technical support for providers.

about the practice (Joan M Cook, Dinnen, Simiola, Thompson, & Schnurr, 2014; Couineau & Forbes, 2011).

Little is also known in terms of how to flex treatments or adapt to contextual requirements while maintaining good clinical outcomes for end users. To assist in having a planned approach to treatment that meets client needs and maintains quality, researchers have attempted to better understand what core elements of EBPs are related to positive outcomes for service users (Galovski et al., 2012), or have developed modular treatments that can be adapted to a client's presentation (Weisz et al., 2012).

CASE STUDY

Maintaining EPB adoption: standard fidelity monitoring vs locally adapted approaches

It is important to rigorously test whether strategies focused on EBP fidelity or those that strive to ensure that EBP use is adapted to local context promote sustainability. The first approach emphasises fidelity to the original treatment protocol through ongoing training, consultation and monitoring. The latter aims to improve effectiveness and a better "fit" by using data-driven, continuous quality improvement (CQI) to address barriers and to drive appropriate adaptations to the treatment or to the clinical setting. A study on the implementation of cognitive processing therapy (CPT) was designed to compare these approaches (Wiltsey Stirman et al., 2017). Although the results of this study have not yet been published, the study protocol gives a clear outline of the two approaches to sustainment.

Elements of the fidelity support condition:

- Regular one-hour meetings by CPT expert to review adherence and competence (fidelity), based on case discussions and session audio review.
- Targeted at clinicians only.
- Guidance on addressing challenges to fidelity (i.e., manual adherence) and CPT training modules review.

Although this arm of the trial does not address organisational context directly, fidelity support does appear to influence other implementation outcomes including sustainability, lower staff turnover and improved workforce capacity.

Elements of continuous QI:

- A learning collaborative approach based on IHI's Breakthrough Series QI model will be used, it includes:
- Initial training in CQI principles occurs via an online platform.
- Regular one-hour web-based meetings which include stakeholders other than clinicians, e.g., leadership and others influencing practice within organisation.
- Action periods take place between meetings, encouraging an iterative approach to solving problems and implementing change ideas identified during meetings.
- Learning and action periods are driven by data, adopting the Plan-Do-Study-Act (PDSA) cycle of learning. Examples of goals for the action periods include increasing CPT engagement, improving effectiveness for particular symptom profiles, or advocating for more frequent sessions.

From a practical point of view, several strategies can be included in a planned approach to adapting practice (Chambers et al., 2013; Wiltsey Stirman et al., 2012).

Assessing fidelity and the reasons why practitioners alter their approach, or only partially use EBPs, is a key requirement. It is also important to address treatment planning issues and decisions made during support provision to ensure that any modification made to EBPs does not compromise quality or outcomes for service users. This is usually done through consultation or supervision support provided by an EPB expert.

Practical system related barriers to fidelity (e.g., time allocation, waiting list and IT issues) also need to be addressed wherever possible through regular review, with iterative changes made as required.

Very little is known about which particular strategies work, or whether a tailored approach is superior to a standardised approach to delivering EBPs. Researchers are in the early stages of developing studies that compare standard implementation approaches that focus on maintaining fidelity of practice to adaptive implementation processes that take a planned approach to tailoring interventions (Cara C. Lewis et al., 2015; Wiltsey Stirman et al., 2017).

6.4.6 Using data and feedback to sustain change

Successful long-term implementation of EBPs is supported by the systematic collection and analysis of data to plan and adjust implementation efforts (Damschroder et al., 2009; R. Glasgow et al., 2019; R. E. Glasgow, Magid, Beck, Ritzwoller, & Estabrooks, 2005; Enola Proctor et al., 2011). Data about client outcomes, the implementation process, and service delivery and utilisation can be used to: 1) inform service planning and understand implementation requirements over time; 2)

KEY ACTION AREAS

1. Focus on harnessing emergent solutions rather than pushing a standardised program onto a service system when implementing or scaling up innovative programs. This means that engagement with service system stakeholders needs to extend beyond consultation to forming partnerships where stakeholders have a shared and equal stake in changing practice.
2. Establish a process and partnerships to foster co-production and collaboration across organisations and/or teams when fostering emerging solutions. Co-production and collaboration allow for ongoing problem-solving and learning from what has been trialed at different sites or by different teams.
3. Optimise the way in which EBPs are delivered throughout the implementation process. Robust data collection and feedback processes need to inform how EBPs are being adjusted to fit the practice context. Use continuous quality improvement, including a robust data collection, analysis and feedback process to plan and assess improvements.
4. Given that practitioners will adapt EBPs protocols, establish a process to understand what core elements of practice lead to good clinical outcomes and to take a planned approach to flexing treatment programs that target both clinical decision making and practical barriers.

monitor and provide feedback on quality of EPB delivery, and 3) evaluate and report on change in implementation outcomes in order to adjust support strategies.

6.4.6.1 THE TYPE OF DATA REQUIRED IN IMPLEMENTATION

Models have been developed to evaluate implementation processes, most notably RE-AIM (R. Glasgow et al., 2019; R. E. Glasgow et al., 2005) and the Implementation Outcomes Framework (IOF) (Enola Proctor et al., 2011). These models have been extensively used to evaluate mental health implementation efforts. The RE-AIM model has recently increased its focus on intervention adaptations and now includes assessment categories that examine the determinants of implementation and the process of change (R. Glasgow et al., 2019). From these models the types of data required in each of the three categories indicated above have been synthesised.

The following can evaluate implementation efforts and inform ongoing planning:

1. Data to inform service planning and understand implementation requirements over time:
    a. Practitioner: practitioner expectations (including attitudes towards EBPs and evidence-based practice in general, perception of intervention, and self-efficacy) and perceived needs (resources, knowledge and skills).
    b. Service user: perception of intervention and service environment in general, perceived information and care needs, and barriers to care.
    c. Service environment: organisational climate and culture, leadership structure, capability and engagement with implementation process.
2. Data to monitor and provide feedback on quality of EPB delivery:
    a. Service user outcomes (e.g., wellbeing or mental health measures).
    b. Fidelity of practice and adaptation.
3. Data to evaluate and report on change in implementation outcomes:
    a. Adoption: percentage of practitioners in a service system or organisation that use the recommended intervention (e.g., EBP or MBC).
    b. Reach: percentage of Veterans and families being identified as needing care, collaboratively planning and reviewing their care using MBC, and/or receiving EBPs.
    c. Penetration: the degree to which an intervention like MBC or EBP is embedded in service systems or a target organisation. This may include assessing factors such as funding and service structures, leadership commitment, organisational processes or reward systems.
    d. Sustainability: maintenance of reach and improvement of service user outcomes over time.

6.4.6.2 ITERATIVE ASSESSMENT TO PROMOTE AND MAINTAIN ADOPTION

The use of ongoing evaluation to inform planning and practice improvement is not new and has its roots in continuous quality improvement (CQI) processes. In an implementation context, the process has been extended to systematically adapt the way in which recommended interventions are delivered and reshape the overall implementation strategy. This involves gathering and sharing data with the implementation team in the initial stages of implementation and at regular time points (Chambers et al., 2013; Elwy et al., 2020; Wiltsey Stirman, Matza, et al., 2015).

Implementation studies describe numerous feedback mechanisms, including initial planning meetings to discuss information about implementation barriers and facilitators; regular meetings between implementers, organisational leadership and practitioners to review emerging concerns, successes and barriers; and direct individual feedback to practitioners. Where individual feedback is used to embed new practice, regular data reporting is used to identify providers that do not meet implementation goals and work collaboratively with them to identify local barriers and mitigation strategies (A. H. Brown, Cohen, Chinman, Kessler, & Young, 2008).

6.4.6.3 THE ROLE OF MEASUREMENT-BASED CARE (MBC) IN IMPLEMENTATION

MBC – the use of outcome and process data to inform clinical decision making in consultation with the patient and care team – is important in the stepped care model because it improves outcomes (Hawkins, Lambert, Vermeersch, Slade, & Tuttle, 2004), treatment fidelity (Dowrick et al., 2009; Knaup, Koesters, Schoefer, Becker, & Puschner, 2009; Poston & Hanson, 2010).

At both organisational and system levels, MBC can improve the quality of care and embed evidence-based practice by aggregating client data as part of ROM (routine outcomes monitoring).

ROM data is used to inform clinic and system level quality improvement, and has well-documented benefits in supporting practice fidelity, as well as reach and sustained use of EBPs (Fortney et al., 2017; Resnick & Hoff, 2019). For example, system-wide implementation initiatives such as the UK's Improving Access to Psychological Therapies (IAPT) program (D. Clark & Clark, 2011) and the US Philadelphia Department of Behavioural Health and Intellectual Disability Services (DBHIDS) program (Byron J Powell et al., 2016), demonstrated how consistent use of MBC and ROM can be built into multi-faceted practice improvement interventions (Ross et al., 2016).

Barriers at the individual (e.g., patient/practitioner), organisational and system levels make MBC and ROM difficult to implement, leading to under-use worldwide (Fortney et al., 2017). At the organisational and systems levels, barriers can include overly complex electronic processes, limited resources for training, high staff turnover and lack of leadership (Fortney et al., 2017; Hatfield & Ogles, 2007). For example, the Veteran's Health Administration Getting To Outcomes (GTO) EBP implementation program documented low levels of sustainment across the two-year implementation period. Issues related to the electronic data systems resulted in inaccurate feedback and evaluation reports, limiting fidelity to MBC, which led to low uptake of evidence-based substance use treatment (Chinman et al., 2017). There are a few exception to reports of low uptake. An implementation of ROM across Canada's Operational Stress Clinics resulted in good levels of self-reported adoption (Ross et al., 2016). However, the use of data to review and discuss progress with clients remained low despite implementation efforts and a user-friendly assessment platform. The UK's IAPT program on the other hand had a high uptake of MBC (D. Clark & Clark, 2011). The case study following presents the multifaceted implementation

CASE STUDY

The role of MBC in implementing high and low intensity EBPs in national program

In 2007, the Improving Access to Psychological Therapies (IAPT) program was initiated, with the aim of increasing access to evidence-based treatment for depression and anxiety disorder in England (D. Clark & Clark, 2011). The IAPT program takes a stepped approach to care with low and high intensity therapies being rolled out. IAPT also includes MBC as part as a multifaceted implementation process. The routine session-by-session outcome monitoring system is utilised by supervisors and service managers to monitor quality of practice and provide feedback. Current research indicates that the program obtains treatment outcome data for just over 98% of its clients and has increased the adoption of EBPs for depression and anxiety, with 5% of individuals receiving EBPs in 2007 and 16% in 2017 (David M Clark, 2018; D. M. Clark et al., 2018).

The following factors ensured that MBC was successfully embedded in routine practice and became a key driver of EBP and stepped care implementation:

- Strong government support with significant funding commitment based on solid economic analysis of benefits of supporting access to EBPs.
- Sites likely to be early adopters were resourced to roll out IAPT first: IAPT's roll out was staggered with pioneer sites chosen to implement MBC and EBPs following a thorough piloting of the program. The selection process for pioneer sites was competitive with service areas required to demonstrate their ability to meet requirements, including commitment to collect routine data.
- Use of MBC was built into an intensive and rigorous capacity building program that included one year of training and supervision offered by expert tertiary institutions and that required demonstration of skill development. This training was tied to a clear role within support agencies.
- Well-resourced IT and assessment infrastructure that supported process and outcome data collection and easy access to data by everyone in the service system, including service users and decision makers, e.g., instantaneous graphic data displays and transfer of regional de-identified data to public website.
- Mandatory requirements around data collection and reporting that included clear KPIs/expectations about client throughput, retention and outcomes tied to program funding. Regional contract managers (commissioners) had access to the data with a clear oversight and quality assurance role.
- Data monitoring used to target areas of need. For example, the NHS IAPT team responsible for developing and rolling out the program identified service systems with lower client recovery rates. The team provided additional training and disseminated information about the determinants of clinical outcomes. During this period, the number of services with low recovery rates dropped by 45%. These types of interventions can be made possible by linking outcome data to service-related information such

as service user socio-economic data (IAPT outcomes could be linked to social deprivation scores) or service delivery (for IAPT, services reported on delivery of high intensity and low intensity EBPs).

Key challenges remain for the implementation of data-driven implementation efforts. In particular the following were noted for IAPT:

- Staff turnover: the investment in capacity building relies on staff stability, but the stringent quality assurance requirements can present a challenge for retention, particularly if staff are not adequately supported to maintain standards.
- Leadership: A workshop with high performing regions delivering IAPT identified clinical and organisational leadership as a key driver of success, with clinical leadership particularly important to help ensure that benchmarking of performance using outcome data is done in a supportive way. Poor leadership was linked to data monitoring being perceived as a burden.

In order to ensure that EBP and stepped care implementation remains feasible and sustained, it is critical that leaders are selected and resourced to create a supportive culture around benchmarking and to prioritise adequate ongoing staff training and resourcing. This includes both organisational leaders and those responsible for managing funding and standards in regulatory agencies and/or government. Without this focus on leadership support, incentivisation through additional funding can become a double edged sword and lead to punitive environments that undermine staff engagement.

strategies tailored to target local barriers used by the IAPT team.

6.4.6.1 BEYOND MEASUREMENT: BUILDING A QUALITY ASSURANCE AND IMPROVEMENT CULTURE

The culture within a posttraumatic mental health system is crucial to its success and much interest has been devoted in recent years to the question of how best to ensure a culture of quality. It has been suggested that the process is a 'team sport', requiring commitment from all those in the system including clinicians, managers and consumer advocates. However, resources and incentives from the Veteran health care administration and funding bodies should also be leveraged to support strategies designed to improve commitment to quality (Amy M Kilbourne et al., 2018).

Several of the building blocks in this section – leadership, measurement based care, workforce development, shared decision making, etc. - are crucial to promoting a culture of quality. Beyond those, factors such as team morale and safety climate are important contributors; it is reasonable to assume that the culture starts from the top – a stable leadership committed to a culture of quality will do much to ensure all staff are achieving the best possible outcomes (David M Clark, 2018).

Although culture and cultural change ideally comes from leadership and team cohesion, external forces such as accreditation processes have an important role to play. Research indicates that accreditation methodology is the primary means by which a health care service implements quality management, with the process itself promoting a culture of quality and increasing patient satisfaction (Terra & Berssaneti, 2019). Models of accreditation will vary according to the nature of the service – a large hospital clearly requires a different model to a single community provider – but whatever the setting, some kind of accreditation is likely to contribute to improved quality.

KEY ACTION AREAS

1. Establish and maintain systematic data collection and analysis to assist in the planning and ongoing adjustment of implementation efforts.
2. Conduct iterative assessments of individual, organisational and system based barriers and facilitators to assist in planning implementation efforts, adapt implementation strategies and understand factors that led to EBP adoption and sustained use.
3. Assess implementation outcomes at several points during implementation, including: 1) effectiveness and fidelity of delivery, 2) reach of interventions amongst service users, 3) penetration (i.e. integration of the practice within the health system or organisational processes), and 4) sustainability of EBP reach and quality.
4. Establish MBC, wherever possible to embed EBPs through individual feedback and data-driven system-wide quality improvement planning. Ensure that MBC implementation is supported by well-resourced IT system, clear requirements and incentives for data collection and a sound reporting framework that is backed by a collaborative and supportive leadership.
5. Ensure that a culture of quality assurance and improvement is established to support the use of data to improve practice and implement EPBs in a sustainable manner.


S O

7 Conclusion

Veterans and their families face a complex array of services and supports and, however disconnected the elements may be, from the perspective of Veterans and their families it constitutes a service system and should be acknowledged and approached as such by those that can influence it.

A Conceptual Framework to Guide the Implementation of Best and Next Practice in Services and Supports for Veterans and their Families, has been developed to acknowledge and more clearly articulate this service system as well as to move the dial forward on improving the wellbeing of Veterans and their families, by providing the rationale for and guidance on the design and delivery of services, recognising the unique role of each player in the overall system of supports and services, and enhancing the coordination of care with the Veteran and their family always at the centre.

The *Conceptual Framework* articulates the diversity of posttraumatic mental health and wellbeing needs of Veterans and their families and provides an overarching design and scaffold around which to build an effective system of services and supports that better meets these needs. At the level of system design, it provides a structure around which current and future initiatives in service development can be considered, and a template for identifying where services and systems across a range of different contexts currently sit in relation to best and next practice services and support. Finally, it provides a guide to the most appropriate system architecture (system level); culture, workforce, systems and processes (organisational level); and competencies required at an individual practitioner level to support the implementation of best and next practice in mental health services for Veterans and their families.

The *Conceptual Framework* brings together an understanding of the diverse needs of Veterans and their families, with knowledge of best practice approaches to mental health care. It outlines a Veteran-centric high-performing posttraumatic mental health system with a next generation stepped / matched model of care designed to optimise wellbeing outcomes at its core. Implementation of this model is considered in light of best practice principles of knowledge mobilisation and implementation, with practical tools and information provided to guide users in the application of the model in diverse real-world situations.

The *Conceptual Framework* has been developed for the full range of stakeholders with an ability to influence outcomes for Veterans and their families. This includes intermediary organisations such as Phoenix Australia Centre for Posttraumatic Mental Health and Atlas Institute for Veterans and Families, as well as government and non-government organisations, health services, communities, peers and individuals and their families. We hope that it proves relevant and applicable information for each of these stakeholder groups, and becomes a valuable resource to guide ongoing service improvement.

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