An insight into Case Management and Challenges in Veteran Suicide Prevention

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ABSTRACT

Much of the literature, policies, programs, and investment has been made on mental health, case management, and suicide prevention of veterans. The Australian "veteran community is facing a suicide epidemic for the reasons that are extremely complex and beyond the scope of those currently dealing with them." (Menz, D: 2019). Only limited work has considered the digital transformation of loosely and manual-based historical records and no enablement of Artificial Intelligence (A.I) and machine learning to suicide risk prediction and control for serving military members and veterans to date. This paper presents issues and challenges in suicide prevention and management of veterans, from the standing of policymakers to stakeholders, campaigners of veteran suicide prevention, science and big data, and an opportunity for the digital transformation of case management.

Keywords: Case Management, digital transformation, Veterans, Suicide prevention, suicide case-based reasoning.

1.0 Introduction

The Australian Defence Force (ADF) serving members perform a variety of roles in their duties with the main objective to defend Australia in the event of an armed attack. The contribution made by both military members and veterans through their role to provide national defence, security, peace and freedom is highly valued. However, there is a serious social issue within the veteran community, the Government has acknowledged the prevalence of veteran suicide, veteran focused social media groups, several Labor politicians, veteran advocates & support groups and campaigners raise the issue - our veterans are suiciding. "The suicide rate for young veterans is double the average. One in five transitioning ADF members considers it. One in ten plans it. One a week goes through with it" reports Senator Jacqui Lambie. Dave Menz, president of the Australian Peacekeeper and Peacemakers Veteran Association Vic Branch discussed the incidence of suicide within the veteran community and the efforts made to date by Government and the ex-service organizations have not yet stymied the problems and the causal links to the extreme high numbers still remains unknown (2019). Research and reviews have been carried out throughout Australia, within Federal and State Government and outside agencies to better understand suicide by veterans and ex-personnel. Recommendations have been provided by the 2016 Senate Standing committee inquiry into veteran suicide including piloting interventions at an individual and community level, including the address of case management to improve suicide risk. This paper provides issues and key challenges faced by the veteran community, with suggestions of a way forward.

Research Methodology

The proposed research is underpinned by the combination of sustainable science (Kates, 2016) and action-based research (Dick, Stringer & Huxman, 2009). According to Kates (2016), sustainable science is very important for health science studies, and it is use-case driven and focus on integration and translation of knowledge. It exacts the needs and solutions to any given problem in association with place and time, and particularly focuses on finding solutions to targeted world problems. It is aimed to provide integrative understanding among multi-disciplinary stakeholders and to transform knowledge into actionable results. Dick, Stringer & Huxman (2009) discuss that action based research involves theory building and testing, informed by knowing, understanding and sense making. In action research, cycles of observation and recommendation guides the research development and utilizes participative practices that are primarily qualitative in nature, drawing on social science, science and multidisciplinary based case studies, data collection and analysis of heterogeneous data sources.

2.0 Facts and Figures-An Insight into Case Management

The Australian CEO of Mental Health and Suicide Prevention Australia stated that, "suicide is one of the biggest challenges of our time" (Maher, 2020). Prime Minister Scott Morrison's press release said that, "Too many veterans take their own lives. One veteran taking their own life is too many. 42 veterans took their life in the in the last set of figures, annually that we have received" (Morrison, 2020). *Soldier On* is a community organisation funded by the Australian Government to support the needs of veterans. The organisation wrote to the Senate Standing Committee and voiced that, "We collectively need to do more to ensure veterans stop taking their lives. While *Soldier On* does believe significant improvements can be made to the compensation and entitlement regulatory frameworks, systems and processes, we do not believe that this will solve the issue. The process of transition from the ADF back into civilian life needs to support the individual to leverage and evolve these mindsets and cultures to embrace the next phase of their personal journey in building successful futures for themselves and their families (2016:12). The Attorney-General of National Commissioner for Defence and Veteran Suicide Prevention was established in early 2020 as a response to extreme pressure to reduce suicides in the Defence establishment. The government stated that, "the death by suicide of any Australian Defence Force (ADF) member or veteran is tragic for the family, and felt by the entire community. Preventing these suicides is a key priority for government". On 27 August 2020, the Attorney-General introduced two bills to the Parliament and commenced a public consultation process for consideration of The Bills which provide that the National Commissioner will work to identify and understand the factors and systemic issues that may contribute to suicide risk among serving and former ADF members, and make recommendations to government about actions and strategies to prevent future deaths by suicide.

3.0 The Government Challenges of Case Management & Suicide Prevention

The Case Management Society of Australia & New Zealand & Affiliates (CMSA) define case management as a collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's holistic needs through communication and available resources to promote quality cost effective outcomes (www.cmsa.org.au). According to Gursansky, Kennedy & Harvey the sustainability of case management has spanned for approx. four decades and is practiced on a global scale. The individualization of service delivery has proceeded relentlessly over the last 30 years, espoused and endorsed as variously meeting the goals of practitioners, consumers, carers, service providers and policy-makers. Understandably, each of these stakeholders has viewed the approach in terms of their own positioning…The co-ordination of services for the individual has meant support for the case management from consumers as they are positioned to be greater involved in the planning and ongoing management of their situations (2003).

The challenges for case management in veteran health and wellbeing are multifaceted with ineffective processes, poor training in the veteran wellbeing and health matters and often due to paper-based systems. In October 2017, The Australian Government responded to the Foreign Affairs, Defence and Trade Committee report, The Constant Battle: Suicide by Veterans and agreed to twenty-two recommendations. The recommendations for case management methodology are significant to the current issue of suicide in the veteran community. The Australian Government agreed to improve identification and management of veterans in at risk groups, by committing $4.0 million over the next 2 years to pilot a personalized and veteran-centric case management service for at risk veterans who require additional support immediately following their discharge from the military. This pilot program is aimed to provide at risk veterans with a case manager, who will identify and facilitate access to support services. In addition to the agreed Australia Government responses to the report, at Recommendation 15, it was agreed that serving ADF members who are at risk should be offered more intensive transitional support service, DVA to support members following their discharge and into their civilian live. The aim of the two years pilot program for case management services for at risk veterans, is an initiative to increase early detection and intervention of mental and physical health concerns immediately following discharge. The Australian Government acknowledges that during the transitional period following discharge, intervention is necessary as this can be a, "risk period for the emergence of mental health conditions and increased risk of suicide" (Australian Government Response to the National Mental Health Commission, 2017). Arthur Ventham, Chairman and Senior Advocate for the Northern Suburbs Veterans Support Centre that aside from mental illnesses, there are several risk factors that may contribute to suicide, attempted suicide and actual suicide. According to the most recent report published by the VA in 2016 (which analyzed 55 million veterans' records from 1979 – 2014), the current analysis indicates that an average of 20 veterans a day die of suicide. The figures often quoted

by Ex-Service Organizations (ESO's) come from the contact with family and friends of those that have taken their own lives. Ventham recommends that the Federal Government agency, "The Department of Veteran Affairs, adopt a case management approach to claims whereby in each State a panel of Senior Delegates take control of a team of delegates and controls the workload" (2016). Such coordination of case managers could alleviate communication breakdown when workers are on leave or unavailable or do not return phone calls to the veteran with a claim in progress. The Partners of Veterans Association of Australia stated that there is a need for a, "Case manager for at risk clients: its is noted that undertakes a Needs Assessment of the veteran to assist delegates to determine the range of services and benefits that may be required. The appointment of additional Case Coordinators from early this year is markedly improving the Department's [DVA] support of veterans at risk of self-harming and who have complex cases that necessitate multi-agency coordination" (2016). The Returned Services Leagues noted that the suicide data is convoluted with deaths that are not definitely suicides, "too many individuals are suffering from poorly managed circumstances at the present time without the necessary care and supervision that's required from a number of appointed agencies" (Doolan:2011). A veteran support agency, *Soldier On,* stressed the importance of accurate and transparent data regarding veteran suicide and noted that without accurate data, the support providers couldn't address the issues. The Australian Government report, *Guarding Against Uncertainty: Australian Attitudes to Defence* identified that concerns were repeatedly raised about the effect of operational deployments on the psychological and physical wellbeing of service personnel and their families, for the community consultation. The report states that, "several people, particularly from health and social work backgrounds, emphasized the need for proper resourcing of the treatment and reintegration of combat veterans, including to minimize the impact on relationships and society" (2015:13). There is a strong community view worth noting that considers Government should put a priority on assisting veterans.

4.0 Social Challenges in Case Management & Suicide Prevention

In 2016, the Senate Foreign Affairs, Defence and Trade References Committee led the inquiry into suicide by veteran's ad ex-service personnel. A total of twenty-four recommendations were made in the Senate Committee report based on the inquiry, The Constant Battle: Suicide by Veterans. The report was tabled in Parliament in August 2017 with the main objective to improve suicide prevention and to deliver the necessary support to ADF members, ex-serving members and veterans with mentally-ill health and psychosocial problems. The progress implementation as at 31 January 2020, identified both substantially complete and completed actions in response to recommendations in the Senate Committee report. The Australian Government Institute of Health and Welfare report identified that suicide is an issue that affects all Australians. It is the leading cause of death for Australians aged 15-44, with around 8 people dying by suicide a day. Current and former members of the ADF, and their families, are not immune to this. "Ex-serving ADF personnel may face increased risk of suicide". (AIHW: 2019).

Senator Jacqui Lambie responded to the Government's announcement to the election of a Veteran Commissioner with reservation. The Senator explained in Parliament that young veterans are killing themselves at twice the national average and we lose a veteran a week. Adversely, the announcement was viewed as a press release promising a Commissioner and a review into the past reviews. A total of 17 reviews have been held in the last 17 years. "They all paint the same sad picture, and we're still making the same mistakes. My inquiry in the last Parliament found that veterans are seeking help from the Department of Veterans Affairs and having their claims delayed or denied inappropriately because DVA staff are overworked and undertrained" (Lambie J. Sen, 2020).

The Department of Veterans' Affairs (DVA) operates Australia's compensation and rehabilitation scheme for veterans with health conditions arising from their military service. Multiple recent inquiries and reviews of the DVA support system have identified that the compensation claims assessment process may contribute to the psychological distress and mental health conditions experienced by some veterans, including self-harm and suicide (Collie, A.,2019:5). Australian Government, Australian Institute of Health and Welfare state that from 2001-2017 that there were 419 suicides in serving, reserve and ex-serving ADF personnel who have served since 2001. Compared with Australian men, and the age-adjusted rate of suicide over this period was 48% lower for men serving, and in the Reserves, and 18% higher for ex-serving men. Over the same period, the age-adjusted rate of suicide among ex-serving women was higher than that of Australian women (AIHW: 2019). An estimated 20% of transitioned ADF members were reported to have experienced suicidality, including 2% who had attempted suicide and a further 7.9% who had made a suicide plan. The rate of psychological distress in transitioned ADF (33.1%) was nearly twice that in serving ADF members (18.7%) and nearly three times the rate in the Australian community (12.8%). A recent report by the

Australian Institute of Health and Welfare (AIHW) supports these findings. The age-adjusted incidence of suicide in ex-serving men (veterans) was 18% higher than the rate in all Australian men. Younger veterans appear to be at greater risk. Veterans under the age of 30 had a rate of suicide 2.2 times higher than Australian men the same age for the period 2014-2016. The Department of Veteran Affairs state in the submission to the Senate Committee that although ADF members display more symptoms and are likely to express ideation than people in the general community, they are only equally likely to actually attempt suicide (2016:6).

An insight into the Submissions to the Australian Government Senate Standing Committee Inquiry into Suicide by Veterans and Ex-Service Personnel:

A large cohort of veterans expressed their personal experiences, challenges and negative dealings with key Government agencies in their submissions to the Australian Government inquiry into suicide by veterans and ex-members. A high proportion of veteran submissions overwhelming held the view that case management and claim processes were inadequate. One ex-serving military member advised the Senate Committee that, "In my experience and that of other ex-servicemen and women I know almost all dealings with the DVA have been difficult and stressful. It seems that when a claim is submitted the standard response is 'NO' thus leaving the member feeling dejected, let down and disappointed over what they thought was a simple process to recognize the condition in relation to their service" (Bunker:2016). Ineffective and lengthy delays in claims processes can affect the mental wellbeing of veterans. Jessica Leonard (2016:1) stated that, "DVA claim acceptance/denial time is ridiculous, 3+ months to accept a claim. Mental health sufferers like myself go through many anxiety attacks waiting and waiting also being sent to MLCOA doctors when we have our own treating specialists".

A veteran suggested the Australian Government to consider digital transformation from paper-based administration and case management processes as the processes proved to be ineffective. "The streamlining of the DVA claims process needs to be addressed immediately. When a member is diagnosed with a condition, that information should immediately be sent to DVA and the claims processed electronically. This way most of the work would have been done when that member does eventually discharge. We live in the electronic age now, and the amount of paperwork that has to be completed is ridiculous. The Medical Officer can easily send any specialist diagnosis to DVA for processing so that everything is on record when the member needs it most, at the end of hopefully a long career" (Submission 79, Name Withheld: 2016).

Daniel Foley discussed his personal views on veteran suicide. "I believe depression and suicide rates are increased when Veterans feel financially threatened or insecure, when they feel mismanaged or ill-treated by DVA and when they are ignored by the very politicians that placed them in harm's way". Financial problems cause a loss in self-worth, they cause families to break up and in doing so deny Veterans much needed family support. When DVA knocks back a claim or pays some Veterans at lower rates than others and continually makes changes to legislation that erode the "entitlements" of Veterans, you get an even greater lowering of self-worth, increases in depression, family break up and suicide (2016). Veterans report the adverse feelings and poor case management experiences with Government agencies. Overwhelmingly, the veterans report high levels of frustration due to the lack of information provided to them about their claim from case workers. Other veterans identified challenges in their efforts to navigate through administration processes of Government agencies.

Prof. Philip Morris is the executive Director of ANZMHA which is now known as Phoenix Australia Centre for Posttraumatic Mental Health reports, "Many ADF personnel are not recognized at discharge as having a mental illness, which often becomes overt later, and frequently service-related mental disorders take years to develop. In addition, Dr Gail MacDonnell of the Australian Families of the Military Research Foundation asserts that the political comparison of the rates of suicide amongst military personnel and the general population to be 'grossly misleading' because of the expected 'healthy soldier effect'. With reference to the Department of Veterans Affairs sponsored study, Suicide by veterans and ex-service personnel study, it was realized any results from comparing the health of National Servicemen with their peers in the general community would be meaningless. As a group, those who fought in the Vietnam war have had a higher suicide rate than a comparable group who did not fight the war. This finding will also be true for recent wars because the same kind of military selection process has been used. It follows that each individual who experiences the trauma of combat has an elevated risk of suicide (2016:3).

Carers Australia NSW report that given the high incidence of suicidality and mental health conditions among veterans and ex-service personnel, the submission draws on research regarding mental health carers, including those

exposed to suicide, in addition to evidence specifically relating to carers of veterans. Evidence suggests that carers of veterans have an especially high incidence of mental health conditions across their life course as a result of their caring role. Research indicates that mental health carers, especially those exposed to suicide, need simpler service pathways and better information and support as they navigate service systems. Clinicians should also ensure that carers are engaged in service planning and follow up after a suicide attempt. Alarmingly, a recent study found the wives of Vietnam veterans also have elevated rates of thinking about, planning and attempting suicide. The children of Vietnam veterans have had a 300% higher suicide rate than their equivalents in the general community, a statistic resulting from veterans' families becoming dysfunctional because of the veteran fathers' war caused psychological illnesses. O'Toole et. al (2015). The study also confirmed that there are robust associations between depression and suicidality in both sexes, and that PTSD was associated with increasingly severity of suicidality in veterans and their partners (Carers Australia NSW, 2016). Mr. Richard Stone an experienced veterans' advocate and member of the Returned and Services League of Australia stated in his submission to the inquiry that, "I believe the following factors contribute to veterans' angst; a. The often lengthy processing times taken after a claim has been lodged including the like lengthy appeals process which exacerbate these timings with a consequent detrimental impact on a veteran's wellbeing. b. The evident inconsistencies in decisions relating to like claims" (2016).

5.0 Data Governance Challenges in Case Management & Suicide Prevention

Our study shows there are 5 major key issues, namely:

(1) Inefficient governance of case management policies and processes, leading to poor service delivery and maladministration of veteran health and well-being

(2) Lack of legislation and terms of reference about compensation leading to poor visibility and transparency in veteran health management.

(3) The traditional methods including clinical and medical studies leading to low level of accuracy in prediction of suicide risks is a very high in cost to the veteran community

(4) Paper-based case management systems among stakeholder leading to for the recording and execution of the government policy, process, service delivery.

(5) Undermine the social studies compared to clinical studies for the root cause analysis, including handling and the implementation of the polices, processes, human services, workflows, and quality of veteran service delivery.

5.1 No validation of the case management policies and processes, leading to poor service delivery and governance of veteran affairs.

In August 2017, the Senate Standing Committee on Foreign Affairs, Defence and Trade delivered its report following an inquiry into suicide by veterans and ex-service personnel; *The Constant Battle: Suicide by Veterans*. The report at *Recommendation 13* initiated that the Australian National Audit Office commence the proposed performance audit of the efficiency of veterans' service delivery by DVA as soon as possible.

The Australian National Audit Office (ANAO) conducted an audit of the DVA business systems to obtain process findings. The main objective of the audit was to assess whether DVA was efficiently delivering services to veterans and their dependents. To form a conclusion against the audit objective, the Australian National Audit Office (ANAO) adopted the following high-level audit criteria:

- Do business systems and processes in DVA support the efficient delivery of services to veterans and their dependent's?

- Has compensation, support and health services been delivered efficiently by DVA to veterans and their dependent's?

The audit identified weaknesses in DVA's business systems and processes, which do not adequately support the efficient delivery of services. In particular, DVA should improve the structure and consistency of workflow management for R&C claims and review its highly segmented approach to processing claims under the various elements of applicable legislation. *The Constant Battle: Suicide by Veterans* report identified that, 'The need to streamline the administrative practices of DVA was the overwhelming concern of most submissions to the inquiry'. DVA should improve its oversight of the progress of individual claims through the processing lifecycle, and its management of medical service provision. The monitoring and reporting of claims is not effective in alerting

management to those which are at risk of taking excessive time to process (ANAO, 2019). In addition, without collecting social service data among the stakeholders, it is difficult to justify the effectiveness of the policies and processes, and the quality of the implementation of those policies and processes.

One of the important issues is that there is no validation of the effectiveness of the case management policies and processes. The *National Mental Health Commission Review* (March 2017) identified that a case management service was necessary for the support of veterans and their families who have complex medical needs, and to manage issues of self-harm and suicide prevention. The DVA and Australian Government have taken an active approach through the pilot of case management services, *The Wellbeing and Support Program* which commenced on 1 July 2018 to provide support to recently transitioned members, and veterans who may have fallen in crisis (DVA, 2020).

Emerging contemporary services and technological advancements in areas of mental health are available to military and ex-serving community, to support the changing needs required for the veterans and their families. The Open Arms Veterans & Families Counselling website has access to essential apps and online resources for 24 hours support for veterans and their families. Positively, the apps and online resources are available to assist in maintaining mental and physical health by helping veterans in a range of circumstances ranging from dealing with suicidal thoughts, the management of symptoms incurred from trauma, building stress and resilience and the management of alcoholic consumption (www.openarms.gov.au, 2020). The Open Arms Veterans & Families Counselling portal and Veterans and Veterans Families Counselling Service (VVCS) websites serve as primary digital entry points for information on mental health and how to access professional support. The VVCS website enables veterans and their families to self-manage their mental health through veteran-specific and community-based digital interventions. In addition to these resources, other mobile apps (including; PSTD Coach Australia, High Res, The Right Mix) e-learning programs, social media pages (Facebook & Instagram) are available to address mental wellbeing and promote support services available to veterans.

5.2 Lack of legislation and terms of reference about compensation processes leading to poor visibility and transparency in veteran health management

There has been no legislation or Terms of Reference into veteran suicide. The Skynews.com.au reported that the "Minister of Defence proceeded to review veteran suicide but they don't investigate and cover up and criminality where veterans are concerned" (Finney: 2020)

Dr. Jon Lane (2016) reported that he felt that the primary issues behind the increasing rates of suicide were due to two primary factors: The inherent administrative difficulties in navigating and completing the DVA / Commonwealth Super processes, and the loss of social connectedness and functionality that occurs after medical discharge from ADF. According to the Australian Government, Productivity Commission. A Better way to Support Veterans report the current veterans' compensation and rehabilitation system does not perform well when assessed against the principles that should underpin the future system. This is in part because of the way the system has been added to over time, but also because of the way the system is set up and the incentives it creates for Defence, DVA and veterans. Veterans and their families could be getting far better outcomes from the dollars the Australian community is spending to improve their lives. The Australian Government, Productivity Commission report details the compensation and rehabilitation process with emphasis on providing evidence-based advice about policies that will improve the lives of current and future generations of veterans and their families, while also improving outcomes for the community as a whole. Despite some recent improvements to the veterans' compensation and rehabilitation system, it is not fit-for-purpose — it requires fundamental reform. The system fails to focus on the lifetime wellbeing of veterans. It is overly complex (legislatively and administratively), difficult to navigate, inequitable, and it is poorly administered (which places unwarranted stress on claimants). Some supports are not wellness-focused, some are not well targeted, and others are archaic, dating back to the 1920s. The institutional and policy split between Defence and DVA also embeds perverse incentives, inefficient administration and poor accountability, and results in policy and implementation gaps (2019).

5.3 The traditional methods including clinical and medical studies leading to low level of accuracy in prediction of suicide risks is a very high in cost to the veteran community

According to Thompson P., et.al (2014), the best prediction of suicide risks leading to suicide death using public clinical and mental health data is about 46%-69%. From the Military perspective, the suicide is the second-leading cause of death among military personnel and more service members dying by suicide than by combat-related causes (Thompson P., et.al 2014).

Australian overall cumulative spending in the last 10 years on mental health is over $1 Billion and in USA and UK, the cost is between $2-$5Billion, yet no significant reduction in suicide risks world-wide, including Australia.

We believe, the funding if it is 5% of funding shifted to social services that it would significantly reduce the stress, psychological aspects of individual concerns rather than bulk funding on clinical studies and medical research.

5.4 Inefficiency in the paper-based case management policy and process management

This data is currently paper-based systems, siloed and poorly managed, which lead to inefficiency in case management. The key points are the lack of visibility and the inefficiency in Case management due to its paper-based systems and delays in processing primary claims. The Returned Services League noted that the suicide data is convoluted with deaths that are not definitively suicides. "Too many individuals are suffering from the poorly managed circumstances at the present time without the necessary care and supervision that's required from a number of appointed agencies" (Doolan, 2011) According to Dr. Alex Collie of the Insurance Work and Health Group, each DVA office performs different claims management functions. In practice this results in claims being handed over from one office to another throughout the course of a claim, which may also have an impact on decision making and timeliness of claims processing (2019: 38). This process of reliance of paper-based systems and change of case worker from various locations evidences ineffective case management impacting time taken to process Veteran primary claims. The Veterans' Advocacy and Support Services Scoping Study reported that the primary complaint received to the study was the length of time taken to process primary claims and the inefficient handling by DVA as responsible for the significant proportion of the delays (2018:50). DVA can improve the efficiency of high TTTP claims processing by reducing the amount of 'inactivity' (delays in the actioning of a claim despite the presence of required information) and through the more structured management of medical specialists. The monitoring and reporting of claims are not effective in alerting management to those which are at risk of taking excessive time to process (2018:43). There were two main reasons for 'inactivity': where claims were effectively 'lost' in the system, and where the delegate did not immediately take action after requested information was received and the claim was actionable. Both issues are indicative of a lack of transparency over workflow within the system (Collie, 2019:38). The DVA has important data sharing relationships with Defence and the DHS that if operating effectively, would better enable the DVA to better perform its claims management function, and to understand the drivers of poor mental health in compensated veterans (ibid).

5.5 Social study challenges compared to clinical studies for mental health

There is a tendency to undermine the social studies for the root cause analysis of veteran suicide because they are not compared to clinical or medical. However, we argue this the weakest link in all the mental health and veteran suicide studies. This social science-based studies will include handling and the implementation of the polices, processes, human services, workflows, and quality of veteran service delivery. Capture these set of data and conjointly predict suicide risks will increase the validity of the risk prediction and that directly relevant to the veteran's moral, physical and mental health issues.

Today, no work has been done on the root cause analysis on this area of social studies that potentially collect the data on the tracking of the effectiveness of the policy, processes and the implementation of these for case management and the effective governance on the human services and case management workflows.

The data in such context contains a lot of information about time, location, event, behaviour, identity (people), features, context, the provenance of the data, responsibility, accountability etc. and these data sets have been neglected. By using conjoint analysis with multi-stakeholder and multiple data sources for suicide risk prediction will results in better governance, policies, process, and service delivery for veteran services. These data sets are distinguished from the data from clinical studies, mental health research, and psychological intervention and should be integrated into the suicide risk management, prediction and prevention.

This is a social science-based research addressing human services management, processes and policy dealing with cases, rather than clinical or medical research that may contribute to suicide and predicting suicide risk from the stakeholders of the special social communities' data repositories.

6.0 Technology Challenges in Case Management & Suicide Prevention

The 2016 Senate Committee Inquiry recommended that the Department of Veteran Affairs (DVA)'s adopt a fully digitalized comprehensive case management for Military, ex-members and veterans. It helps increase the

compliance, improve audit results, supports policymakers' vision for better serving Military history, culture and veteran communities. Prof. Alex Collie of Monash University discussed the implemented processes that have improved veteran claim practices. DVA has established a Single Access Mechanism (SAM) with Defence that is intended to enable the rapid provision of service information to the DVA to support efficient claims determination. Several initiatives are underway to improve the exchange of information, including the early registration of serving ADF members with DVA and providing direct access for DVA staff to Defence eHealth records. DVA uses a number of systems to support its decision-making, which are being progressively integrated and replaced. ISH is hosted by DHS, and DVA also relies on its own back-end systems to support its decision-making. Improved access to data offers the opportunity to transform claims processes, where data-based claims triage involves daily data feeds from claims information systems to segment clients into risk categories that are then streamed into tailored claims management pathways (2019:38). Furthermore, the Australian Government has funded a range of services, including a single platform for the delivery of digital mental health tools to those in need of support, specifically aimed for veterans at risk of suicide. The Veteran Mental Health Strategy provides a framework on suicide prevention with emphasis on promotion, prevention, and early intervention to support members and veterans with mental health issues. The 2016-17 Budget allocated funding to continue the Operation Life suicide awareness and prevention workshop as an approach to curb veteran suicide. The Operation Life online tool and suicide prevention resources to enhance the safety of those experiencing suicidal ideation with the support of a clinician (DVA, 2016:10).

Emerging contemporary services and technological advancements in areas of mental health are available to military and ex-serving community, to support the changing needs required for the veterans and their families. The Open Arms Veterans & Families Counselling website has access to essential apps and online resources for 24 hours support for veterans and their families. Positively, the apps and online resources are available to assist in maintaining mental and physical health by helping veterans in a range of circumstances ranging from dealing with suicidal thoughts, the management of symptoms incurred from trauma, building stress and resilience and the management of alcoholic consumption (www.openarms.gov.au, 2020). The Open Arms Veterans & Families Counselling portal and Veterans and Veterans families Counselling Service (VVCS) websites serve as primary digital entry points for information on mental health and how to access professional support. The VVCS website enables veterans and their families to self-manage their mental health through veteran-specific and community-based digital interventions. In addition to these resources, other mobile apps (including PSTD Coach Australia, High Res, The Right Mix) e-learning programs, social media pages (Facebook & Instagram) are available to address mental wellbeing and promote support services available to veterans.

Big Data management using artificial intelligence and machine learning for suicide prevention or 'at risk' case management of veterans will assist to provide the opportunity-

- *For a deeper understanding of suicide patterns and risks;*
- *To gain a greater knowledge of the critical factors and systemic issues that contribute to veteran suicide death;*
- *To use predictive analytics for early detection and prevention of the death by suicide;*
- *To demonstrate timely support for the mental health issues and needs of veterans;*
- *To use predictive analytics platform for early identification, supervision, and control of suicide risks;*
- *For better support for the Military and veteran community;*
- *For increased resilience and maintenance of Military capabilities;*
- *To aid more visibility and risk situation awareness for effective case management; and*
- *For possible adoption of an analytical framework for application to other vulnerable and minority groups.*

It is suggested that the use of Artificial Intelligence and machine learning for veteran suicide prevention and case management is timely and achievable, if combined with Social Sciences, Science & Engineering-based applied research that addresses the need of:

- An analytical understanding of factors and systemic issues that contribute to suicide death though A.I, and
- Predictive analytics techniques and a platform for early suicide risk detection and prevention.

Bryan, C.J, Thompson, P., Puolin, C. (2014) explain how predictive analytics could demonstrate the probability of attempted veteran suicide using raw numbers of data. Case managers could assess the impact of interventions against raw data and measure the relationship of attempted suicide reduction and suicide in veteran populations. The study known as the Durkheim Project demonstrates, "effective suicide risk prediction systems can be built on the integration of machine learning methods and experts" in the field. Additionally, clinical studies carried out indicate, "Supervised machine learning techniques can uncover predictive risk factors that are not clearly understood by the medical community". The project offers a prediction triage model that aims to improve suicide prevention within active military and veterans.

7.0 Recommendation for Better Governance in Veteran Suicide Case Management

Integrating online health information technologies with face-to-face services can improve the identification of people at risk of suicide by using online assessment before face-to-face appointments to enable an appropriate and timely response from service providers and facilitate rapid identification of individuals at risk of progressing to more serious mental illness. The Project Synergy online platform is differentiated from others in use health information technologies as it focused on supporting existing health services to be more effective in delivery of care at scale. The research and development cycle of the project, "Not only do online health and wellbeing technologies address traditional geographical, economic and human resource barriers, they can also provide a valuable platform for screening, prevention, early intervention and referral processes" (Hickey,I., Davenport, T., Burns, J.M., 2019). The Project Synergy report details that the [cycle] has a rapid turnaround and it's crucial that the turnaround is rapid because new evidence based innovations are continuously being developed and they must keep pace with the rapid rate of new and emerging technologies being released on a daily basis (ibid).

In October 2017, following the Committee recommendation that while the Veteran Centric Reform (VCR) program is being implemented that the Australian Government will continue to fund measures to alleviate claims processing staff and reduce the backlog of claims and, increase case coordination staff to assist clients with complex needs. The Australian Government committed $4.0 Million over two years to pilot a personalized and veteran-centric case management service for at risk veterans who may require additional support immediately following their discharge from the military (2017). Professor Alex Collie reviewed the trial program, the VCR is a major six-year program of work that commenced on 1 July 2017, and has received funding of $166.6 million (2017/18) and $111.9m (2018/19) in the first two years. The program includes nine work streams that collectively seek to transform business processes, improve service delivery and redevelop information and communication technology. An overarching objective of the VCR program is to move the DVA to a proactive claims management model from its current reactive approach. A major focus of the VCR programs is on the digitization of DVA processes and enabling better use of data and analytics (Collie, 2019:33).

8.0 Better Governance in Suicide Case Management and Addressing Person-at-risk

Carers Australia NSW, a non-government organization responded to the inquiry with a focus on suicidality rates of veteran's partners. Given the high incidence of suicidality and mental health conditions among veterans and ex-service personnel, the submission drew on research regarding mental health carers, including those exposed to suicide, in addition to evidence specifically relating to carers of veterans. Alarmingly, the relative risks for suicidal ideation, planning and attempts were 7.9, 9.7 and 13.8 times higher for veterans compared with the Australian population and for partners were 6.2, 3.5 and 6.0 times higher than the general population (O'Toole, 2015). Family members, partners and friends play a key role in the lives of people living with a mental health condition… Many experience stigma and isolation and feel overwhelmed by a complex service system. Mental health carers who have been exposed to suicide are reported to have difficulty accessing and understanding the information and services the care recipient requires. Research indicates that mental health carers, especially those exposed to suicide, need simpler service pathways and better information and support as they navigate service systems (Carers Australia NSW, 2016). Prof. Philip Morris, a psychiatrist explains that isolation from others is a powerful risk factor for suicide. Perhaps the most important thing that can be done to prevent suicide is to connect the person at risk with individuals from caring networks of peers, family, and professionals. Personal contact with the person at risk by one or more of the individuals from the caring network reduces isolation and improves self-esteem – both likely to increase the threshold against self-harm. This will mean a more accepting attitude of veteran-based rehabilitation programs that focus on social inclusion and participation (2020).

9.0 Conclusion

Despite recent improvements to the compensation claims system reform there is a requirement to review the current Veteran's compensation and rehabilitation processes. The DVA processing times were lengthy and administering claims have been described as unnecessarily adversarial and complicated. In conclusion, there appears to be multiple opportunities for the DVA to introduce further reforms to its compensation claims processing model, in order to mitigate any potential impact on veteran mental health. Best practice is moving from a liability and cost focused, claims processing model to a health and function focused, client-centered model (Collie, 2019:7). It is in the best interests of veterans, their families and the Australian community for the Australian Governments to adopt efficient administration practices – a simpler and easier system to navigate, a greater focus on prevention of injury and mental health with improved rehabilitation and responsive traditional support to meet the future key challenges and emerging needs of veterans.

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