



Invisible Wounds: Preventing Suicide in Our Nation's Military and Veteran Communities
Statement by Brigadier General (ret.) Jack Hammond
Before the House Committee on Oversight and Reform
Subcommittee on National Security

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Chairman Lynch, Ranking Member Grothman, and Members of the Subcommittee, thank you for the opportunity to testify today. My name is Jack Hammond, and I am a retired Brigadier General from the U.S Army. I served in the Army for more than three decades and was honored to lead both American and NATO troops in combat during multiple commands in both Iraq and Afghanistan. My combat service required me to constantly develop innovative and adaptive solutions to be successful while fighting on the treacherous and ever-changing battlefields of Southwest Asia and the Middle East. These experiences provided deep insight into the impact of these protracted wars, not just on myself, but also my soldiers and our families. After completing consecutive deployments to Iraq and Afghanistan, I returned to the U.S. and my wife, a registered nurse and former Army captain, noticed changes within me consistent with symptoms of PTSD. While she encouraged me to seek care, like many Veterans, it took three years before I followed through, enabling me to return for my final command in Afghanistan. When I returned home from deployment in 2012, I once again returned to therapy for maintenance care.

Later that same year, I retired from the Army and was shortly thereafter invited to lead the Home Base Program, a partnership between the Red Sox Foundation and Massachusetts General Hospital, which operates the Nation's premier Center of Excellence to treat the invisible wounds of war. For the past decade, it has been my honor to work alongside an extremely talented group of professionals at Home Base where we have developed a range of innovative solutions for the complex injuries associated with the invisible wounds of war, enabling our warriors and their families to reclaim the lives they richly deserve.

My testimony today is based solely upon my personal experience with PTSD through combat exposure, meaning my commitment to the welfare of our Veterans and service members comes from leading these troops during multiple combat commands in Iraq and Afghanistan. Over the past decade, we at Home Base have made great progress in the development of innovative solutions, new models of care, and increased access to the best support available in the country for our Veterans, Service Members and their Families. Through this work, we have successfully prevented suicides, rebuilt broken families, and assisted these brave men and women to reclaim their lives.

Today, I would like to provide you with an alternative perspective on the challenge of Veteran and military suicide, based upon my work with mental health and brain injuries, as well as my understanding of this at-risk population. I recently read the President's strategy to "Reduce Military and Veteran Suicide" and its five guiding principles, and, while it is exceptional, the challenge I foresee involves implementation, an area in which previous plans have fallen short.



The solutions I address here today will highlight the need to aggressively approach this challenge in a proactive manner within the Department of Defense through two measures: first, the development of a far more enhanced *Risk Assessment* tool for suicide which begins during initial training; and second, a combination of *Risk Mitigation* tools and *Preventative Maintenance* tools that provide the right person with the right tools at the right time. This will allow us to focus our limited resources on those who are most at-risk for suicide using an array of tools, all currently available to Department of Defense. The second aspect of testimony will focus on a major shift from VA-centric care to community-based care in partnership with the VA. Roughly 75% of Veterans have never received care from the VA for a range of reasons, yet most discussions on Veteran suicide are focused on a single VA solution. This leaves the majority of the Nation's health care systems and community-based clinics on the sidelines. The 550% growth from budget and infrastructure of the VA past 20 years is not sustainable, especially when we consider the rapidly shrinking Veteran population. Our focus should – and must – be to improve access to the highest quality of evidence-based care *regardless* of the location.

During the height of the pandemic in the Spring of 2020, I was asked by Governor Charlie Baker of Massachusetts to construct, staff, train, and operate a 1,000-bed COVID-19 field hospital called Boston Hope. The Boston Hope Field Hospital was constructed and operational within ten days, ultimately caring for 750 COVID-19 positive patients during a critical three-month period, never once losing a patient to this insidious disease. I mention this to highlight how, when we work together, we can overcome seemingly insurmountable challenges, leading to great work for the good of our communities. As we look at the crisis we now face with Veteran and military suicide rates rising rapidly, we must tap into every available resource in the country. At Boston Hope, we leveraged the resources of the public and private sector, state and federal governmental agencies, military and civilian medical and police forces, and union and non-union labor forces. If we harness the incredible power of both the public *and* private sector, we can stem the tide of Veteran suicide. We must demonstrate the same level of flexibility, adaptability, and innovation that our warriors demonstrated for the past twenty years on the battlefields of Iraq and Afghanistan. As we often say at Home Base, “Their mission is complete. Ours has just begun!”

About Home Base

Home Base is a unique partnership between the most philanthropic sports team in the country – the Boston Red Sox, and one of America's best hospitals – Massachusetts General Hospital (MGH). Home Base became operational in 2009 and is dedicated to healing the invisible wounds of war through clinical care, research, education and wellness. We have successfully cared for more than 30,000 people through a range of treatment and support programs – all at NO COST to warriors or their families. Each day, Home Base cares for some of the most injured warriors and family members in the country. It does so by leveraging the extensive resources and faculty of the MGH, Harvard Medical School, Spaulding Rehabilitative Hospital, the Massachusetts Eye & Ear Hospital, and other elements of the Mass General Brigham Healthcare System, in order to deliver world class, evidence-based care to Veterans, actively serving members of the military, and military family members. All clinical care, travel, hotels, and meal costs are covered by



Home Base through the support of a grateful nation and partnerships with organizations like the Wounded Warrior Project, Fisher House Foundation, Navy Seal Foundation, SEAL Legacy Foundation, and many others. For more than a decade, Home Base has developed innovative treatment programs for PTSD, traumatic brain injury, stress & anxiety reduction, substance use disorder, and wellness. It has also engaged in national research and provided clinical training to 70,000 clinicians from all 50 States.

In 2014, Home Base developed a *2-Week Intensive Clinical Program for PTSD & Traumatic Brain Injury* which compresses roughly 2-years of therapy into 14-days. The program was brought to scale in 2015 through a partnership with the Wounded Warrior Project and three Academic Medical Centers (AMC's) -- UCLA Health, Emory Healthcare, and Rush University Medical Center. Together we formed the Warrior Care Network®, a nationwide, comprehensive care network that enhances access and provides clinical and family-centered treatment to Veterans in need. All four academic medical centers share best practices, address common challenges and have a common approach to data collection and outcomes measures. In addition, Home Base and the other sites have a functioning MOU with the Department of Veterans Affairs, allowing bi-lateral referrals and imbedding VA staff at Home Base to provide rapid records transfer, benefits support and reconnection back to the VA upon completion of care. Five years of data outcomes collected at four separate AMCs have validated the effectiveness of this program. Every two weeks, 2 new cohorts of 12 people are flown to Boston at no cost to the veteran or family, with remarkable, documented results.

In 2017, Home Base launched the first dedicated program for the surviving spouses of military and Veteran suicide through a national partnership with Tragedy Assistance Program for Survivors (TAPS). Home Base's *Families of the Fallen 2-Week Intensive Clinical Program (ICP)* provides treatment through a multidisciplinary clinical team with individual and group treatment as well as holistic, integrative health programs that include art therapy, mindfulness, fitness, nutrition and trauma-informed yoga. The program is delivered in a cohort model allowing families to create community with those that have experienced similar tragedy and stay connected after they complete the program. The intensive and accelerated nature eliminates barriers to care by limiting time away from work and family. The program is provided at no out-of-pocket cost to the participants. In addition, TAPS has implemented a postvention program to provide additional support to survivors after they complete their time at Home Base. Home Base has three dedicated cohort groups of TAPS survivors each year in this unfunded program and will expand as we secure additional funding.

In 2019, Home Base was selected by Naval Special Warfare Medical Command, a subset of USSOCOM, to develop a pilot program that could address the complex medical needs of these unique warriors – as no program of this type existed. Home Base leveraged our affiliations with world renowned health care institutions to launch a four-day Comprehensive Brain Health and Treatment Program (ComBHAT Program) that provides coordinated, integrated, multi-disciplinary specialist evaluation, treatment initiation, and care coordination for active duty and Veteran operators with mild and moderate TBIs. Patients receive specialty evaluation from brain

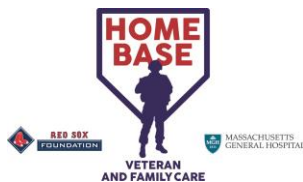


injury medicine, neuropsychology, clinical psychology, psychiatry, neuroendocrinology, sports medicine, musculoskeletal and vestibular physical therapy. Other evaluations and services are provided on an as-needed basis. Accompanying diagnostic tests include neuroimaging, hormone evaluation, metabolic testing, other laboratory testing, and cardiovascular and cerebrovascular function testing. Treatments are recommended based on evaluations and can include, but are not limited to, cognitive rehabilitation, vestibular physical therapy, headache treatment, sleep interventions, medication or injection-based therapies for musculoskeletal pain, and home exercise programs. Each participant leaves with a comprehensive and personalized treatment and rehabilitation plan to implement in their home community. ComBHat is unique in that it is a highly efficient, compressed 4-5-day care model that limits the time away from service, work, and family. In other healthcare settings, the complex process of scheduling and implementing this array specialty appointments would take months if not a year to schedule. Over the past 24+ months, more than 200 Navy Seals, Green Berets, Delta Force members, and other SOF troops have completed this unique program and 300 more are currently on the waitlist. Seventy percent of these men are on active duty, and remarkably 97% have been returned to full duty.

In 2015, Home Base piloted a new series of wellness-based programs in Southwest Florida to determine if we could effectively care for and support an at-risk group of Veterans not seeking or able to access care at the VA. It began with a health and fitness program hosted on the campus of our amazing partners at Florida Gulf Coast University. The Warrior Health and Fitness Program was designed in partnership with the strength and conditioning coach for the Red Sox (who is also an Iraq Veteran), with a goal to improve our warrior's health and bring them together as a team to assist with transition challenges. Virtual wellness programs were also added with great success, but we soon realized that a clinical capability was needed for the thousands of Veterans living halfway between Tampa and Miami VA Hospitals.

To address this gap in care, Home Base began a partnership with the Lee Memorial Health System in Fort Myers in 2019. A low-cost, high-return clinical program was created in which clinicians from the Lee Health Behavioral Health Center were trained and certified in evidence-based treatment for PTSD by the Home Base Training Institute. Our goal for this effort was to build clinical capabilities and capacity in underserved Veteran communities. Through local fundraising and support from the Wounded Warrior Project, we now secure 50% of these clinicians' salaries, which enables us to provide evidence-based PTSD care to our Veterans at no cost to them. A similar program was developed in Naples, FL for Veterans from Collier County, which has enabled us to effectively improve access to care for Veterans living in the 5-County Region of Southwest Florida. In 2021, Home Base launched a partnership with Tampa General Hospital to assist in developing a Warrior Health and Fitness Program in Greater Tampa. Additional discussions are underway to develop a traumatic brain injury program and mental health clinic.

Home Base has also begun initiatives with the Navajo Nation and Governor Ducey of Arizona to grow clinical access, capabilities and capacity for veterans and families on the Tribal Lands and in Arizona, building upon the community-based work we developed in Massachusetts. In 2018,



Home Base embarked upon a statewide suicide prevention campaign in collaboration with the Governor of Massachusetts, federal, state, & local legislators and officials, 125 Police Departments, the VFW, and the VSO's that work across the Commonwealth. The focus for this initiative is to train clinicians in evidence-based care for PTSD and build capacity in underserved regions of Massachusetts. In tandem with this effort, we deployed a state-wide program to train and activate first responders and VSOs to recognize Veterans exhibiting at-risk behavior and connect them to care.

Over the past decade, Home Base has developed an array of programs that range from wellness-based clinical education to complex clinical care. Throughout this time, we have identified and removed most of the boundaries to care to ensure that our Veterans have access to the best care available in the country. This program remains exceptional because of the dedicated team of clinical professionals at Home Base who take a holistic approach to our treatment programs and work with our Veterans to simultaneously address the contributing causes for their mental health challenges beyond their clinical trauma. We fully recognize the limiting factor in our ability to treat all of those in need of care, and therefore established our Training Institute to grow clinical capabilities and capacity in underserved communities. We have learned a great deal by meeting with and listening to VSO's from across the country that remind us that while a community driven response is crucial, these efforts are grossly under resourced and face significant shortages in clinical providers trained in evidence-based treatment for trauma related injuries. PTSD is an injury of avoidance, as are most mental health injuries to include depression, anxiety and stress. If untreated, each of these can increase the risk for suicide. When all three are present along with the effects of mild traumatic brain and substance use disorders, there exists a perfect storm of injuries that creates a sense of hopelessness which can trigger suicidal ideations. Finally, the need for enhanced tools for suicide risk assessment are critically needed. Based upon our work with world leading experts from the Harvard Medical School and MGH faculty we have learned that the ability for a clinician to accurately predict suicide within their patient is no better than chance, but with enhanced risk assessment tools and the integration of machine learning and AI, we can develop a highly accurate predictive model that will also produce a clinical decision support tool needed to practice precision medicine. That is where the next chapter for Home Base will be, and I strongly encourage our friends at the VA and DoD to develop similar plans.

Today's Military and Veteran Suicide Challenge

After two decades of war, this Nation must now come to terms with the long-term impact of these multi-generational combat operations, specifically the human costs associated with protracted war. The price for securing our country has been high. Three million Americans have deployed to war since September 11th, 2001, and 7,057ⁱ of these brave Americans have made the ultimate sacrifice to prevent further attacks upon the United States. A staggering 1.8M more have incurred some type of permanent disability and more than 30,000 of our post 9/11 warriors struggling with the *invisible wounds* have lost that fight and died by suicide here at home.ⁱⁱ



Military and Veteran suicide remains a significant and growing threat to the lives of Veterans who faithfully served this nation during post 9-11 combat operations. These men and women willingly placed themselves at great personal risk to ensure our safety with an implied trust that we would care for them if they returned home wounded, or care for their families if they were killed. Sadly, we as a nation have fallen short in this task, and four times the number of warriors killed in action in post 9-11 fighting have now died by suicide after returning home. Hundreds of billions of dollars have been spent to stem the tide of Veteran and military suicide, but thus far we have failed to fully mitigate this threat and protect those who were made vulnerable by their service. The wake of destruction from suicide does not end with these warriors. Recent data collected by the DoD has shown that this insidious threat has metastasized and spread to our military families and children. We now know that nearly two hundred military family members die by suicide each year based upon data collected since 2017ⁱⁱⁱ.

Now is the time for change if we hope to stem the tide of military and Veteran suicide. The definition of insanity is to repeat the same action and expect a different result. Despite our best efforts, and the investment of billions of dollars in the VA and DoD, the number of Veteran and military suicides continues to rise. A significant course correction can be implemented immediately if we decisively engage the incredible resources held within the private sector, academic medical centers, and non-profits - which traditionally solve this nation's complex medical challenges. The White House recently published President Biden's "Reducing Military and Veteran Suicide" strategy, with five priority goals:

1. Improve Lethal Means Safety
2. Enhance Crisis care and Facilitate Care Transitions
3. Increase Access to and Delivery of Effective Care
4. Address Upstream Risk and Protective Factors
5. Increase Research Coordination, Data Sharing, and Evaluation Efforts

While each of these priorities have great merit, the devil is always in the details. Many great plans can often become mired or derailed based upon their organizational aversion to change. We have seen a number of new initiatives launched over the past decade in hopes of offering Veteran's access to private sector care, but each time these plans were rendered impotent by bureaucratic obstacles that have plagued the VA and challenged the DoD. It remains highly questionable whether or not any future attempt to reduce the barriers to VA funded care from the private sector will meet any more success than we have seen for the past two decades, unless there is a major transformation, and we commit to a true public-private partnership. Time is not our friend, as thousands continue to needlessly die each year, and each of these "priorities" appear to require lengthy staffing, analysis, and feasibility studies that involve working groups comprised of multiple government agencies and a VA centric approach.

Noticeably missing are the private sector and non-profit organizations that are currently implementing a range of these solutions or could have the greatest impact. Improving gun safety is crucial to preventing impulse driven suicides. But missing from the strategy is engagement



with all the “gun” organizations beginning with the NRA and including those who manufacture and sell guns, as well as weapons ranges that routinely see gun owners and may notice a change in their behavior. Enhancing crisis care is the second priority and there is great discussion on the implementation of the 988 Mental Health Crisis line which is a great victory and long overdue. But a more pressing challenge echoed by every Veteran Service Organizations is what to do with these warriors when they alert us to their ideations at 11 pm on Saturday night after they have been drinking? There is a national shortage of VA and mental health facilities with the capacity to take this Veterans, and most community hospitals do not have mental health capability – especially during non-business hours when the majority of these crisis occur. As we look at priority 3’s goal to Increase Access to and Delivery of Effective Care, a multi-agency work group will spend a year looking at the barriers to care and making recommendations for actions and policy recommendations. The primary issue we have seen across the country is the shortage of clinical care providers, trained in evidence-based treatments, who are able to provide this care at no cost to the Veteran. There is a national shortage of mental healthcare providers, and this remains a central challenge for the VA. If you want to improve access for Veterans to receive timely and evidence based mental health care, the VA must actively partner with the private sector and non-profit clinics, develop appropriate streamlined referral and funding models, and build in quality assurance through existing federal certifications from Medicare and Tricare. I will discuss this in more detail under my recommendations.

Based on my 31 years of service in the Army and 10 years leading one of the Nation’s premier clinical programs for Veterans, I would like to offer what I believe to be informed recommendations. There are two sides to this coin. One is for the DoD, and it will focus on a plan developed by team of experts from Harvard and MGH who routinely advise the World Health Organization, the National Institutes of Health, and the military on suicide. This will focus on an enhanced risk assessment and mitigation strategy for suicide that will allow us to focus our resources and efforts on those with the highest risk for suicide. Based upon the analysis of this data we can then developed proactive measures that include enhanced mitigation plans and preventive maintenance efforts, rather than focus our energy on crisis response efforts to suicidal ideations. It is important to remember that the at-risk population we are concerned with is comprised of the healthiest segment of the American population who have already been screened for physician and mental health issues. Based upon the impact of their service and combat experiences these men and women now face a 200-300% increased chance for suicides. Every single high-risk activity that occurs in our military – regardless of whether or not it takes place during peacetime training or war – requires a risk-mitigation strategy. I would submit to you that the risk of suicide, which continues to claim one life each day, requires an enhanced risk assessment & mitigation strategy.

The second side of the coin, provides recommendations for the VA. These are based upon actual lessons learned, and the experience gained from solutions that have been developed and implemented by Home Base and other non-profit organizations with exceptional success with limited resources. The overarching theme for these recommendations is to develop solutions based upon significantly enhanced partnerships with private sector organizations, non-profits,



and academic medical centers. This care can be provided by organizations with a proven track record of success that can work with the VA in a true partnership where top tier care is purchased at market value through community-based providers with easy access by providers trained in evidence-based care. In addition, it can also be delivered by clinicians from community-based health centers who are trained, certified, and paid by VA.

Recommendations for the Department of Defense

In July of 2021, I had the unique opportunity to work with a team of experts (listed below) from Harvard Medical School and MGH to develop a suicide prevention strategy for the Army.

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Concept

Suicide is the second leading cause of death among Americans ages 10-34 years, and rates have risen by nearly 35% over the past two decades¹. The toll has been even greater among military service members (SMs) and veterans. Recent data show that deaths by suicide among military personnel and veterans exceed combat-related death by more than 4:1.² Trying to predict and prevent suicide among all Army SMs presents a challenge that cannot be solved with a one-size-fits-all approach. **Some individuals are at very low risk and do not need significant prevention resources, whereas for those at very high risk, those same efforts may not be enough to make a difference.** Reversing this crisis will require a systematic effort not only to apply state-of-the-art, evidence-based best practices, but to identify **who** needs **which** intervention, and **when**. Recent advances in machine-learning-based prediction algorithms present an opportunity to identify a subgroup of individuals at elevated risk and match them with individualized prevention plans.



We proposed a two-pronged approach to: (1) improve identification of those at risk; (2) optimize prevention and intervention selection for the right person at the right time. The Army has unique needs for suicide prevention and also unique abilities and existing resources to effect solutions. Our proposed approach leveraged these abilities and resources to optimize suicide prevention among SMs. **Enhanced assessment and risk stratification** integrates and builds on the comprehensive data the Army collects regarding individual SMs. Our proposed **risk mitigation strategies** leverage an already well-known Crisis Line and an array of available mental health interventions and suicide prevention strategies. At all levels, we aim to provide the Army with an advanced approach to maximize the potential of these assets in the service of saving the lives of SMs by preventing more deaths to suicide. **Fundamental to our proposal is also continuous quality improvement - a commitment to a scientific process of iterating and improving based on outcome data.** By combining expertise in machine-learning-based prediction, suicide prevention, and the unique needs and assets of the Army this strategy will prevent suicide deaths using our strategy of Enhanced Risk Assessment and Risk Mitigation.

Proposal

The U.S Army does an exceptional job in conducting *Risk Assessments* for any high-risk training or operations to include aviation operations, rappelling, and live fire exercises. If it consistently lost 200-300 Soldiers each year to any training event, there would be a strategy developed that included two components; *Risk Assessment* to identify key contributors to the life-threatening risks, and a *Risk Mitigation Strategy* to identify the proactive actions that can be taken to reduce the likelihood of a mishap. Our proposal mirrors this structure for the problem of suicide prevention.

I. Enhanced Risk Assessment: Who is at greatest risk for suicide? A major challenge for delivering effective and cost-efficient preventive measures is the difficulty in identifying who is at the greatest risk for suicide and when. Risk for suicide is not evenly distributed across all people, and it is critical to identify the smaller subset of individuals where risk is most concentrated. Clinical interviews unfortunately cannot be relied on for this purpose. Half of SMs who died by suicide from 2004 to 2009 did not have contact with healthcare in the month prior, making an in-depth clinical evaluation impossible. Among those who did, structured documentation of suicidal thoughts or behaviors was rare (13.8%).⁴ Additionally, studies have shown that clinicians perform no better than chance at predicting who will go on to make a suicide attempt⁵. However, over the past decade, members of our team have pioneered and validated innovative and data-driven approaches to improve risk assessment for suicide and suicide-related behaviors.³ Our machine-learning algorithm-based approach has proven to be a useful method of stratifying individuals by level of risk in military and civilian samples even among people who do not present to healthcare (by integrating with other updating data sources) or who do not report suicidal thoughts to a healthcare provider.⁶⁻¹³ In the military context, these methods can be used to integrate data across diverse Army and DoD data systems to stratify soldiers into those at extremely high risk (e.g. those in the top 10% of predicted risk), high risk, moderate risk, and low risk. Prediction accuracy could be improved by including information from a universal inception survey (like the Army STARRS New Soldier Survey)^{14,15} and



periodic targeted self-report assessments. Consistent risk stratification could be used to help leaders implement appropriate levels of intervention, described below. By leveraging the comprehensive data systems employed by the Army, one of the most accurate suicide risk prediction systems in existence could be developed and used to address the problem of Soldier suicidal behaviors. To support this assessment, we propose to further enhance the aggregation of structured data by:

- a) Direct Structured Assessment - Inclusion of an enhanced assessment battery at the start of service would greatly improve risk prediction models by providing **more** data and potentially **more accurate** data than exist in current Army and DoD data systems. Use of self-report, computerized assessments could cull more honest information from SMs, as more confidential modes of reporting can promote higher likelihood of admitting thoughts and behaviors experienced as embarrassing or stigmatizing.^{16,17}
- b) Data Extraction - State-of-the-art methods can be used to extract relevant information from both structured and unstructured components of existing administrative records. This enhanced data warehouse would enable faster and more accurate risk stratification tools than currently exist to support decision-making.
- c) Iteration and Model Improvement - Over time, with the accumulation of more data, we will be able to continuously update and improve model accuracy.

II. Enhanced Risk Mitigation and Preventive Maintenance: What is the right thing to do at the right time for the right person? Once an accurate risk stratification pipeline is developed, we can implement Enhanced Risk Mitigation efforts toward those at moderate-to-high risk (as well as those who self-identify as needing intervention).¹⁸ We propose the development of a scalable system for precision prevention using and expanding existing military resources. This could build on the model of the existing DoD Crisis Line but provide a new data-driven system to match at-risk individuals with the suicide prevention strategy that meets the particular needs of that individual at that time. Without a decision-support tool, a SM might be given the wrong intervention for their personal risk profile. Or a SM might be given the right intervention but too early or too late. Using machine learning to optimize this matching of person, treatment, and timing will ensure that the Army can use its assets efficiently and effectively.

- a) Curated Prevention Strategies - We propose first to compile all available mental health interventions and suicide prevention strategies currently employed by the Army and the DoD Crisis Line (for example, the MoodHacker app, referral to psychiatric services, Safety Planning, Battle Buddies) to construct a menu of options available along a continuum of risk for suicide. This structured system could provide a platform for additional interventions to be tested, such as virtual stress resilience groups or peer coaching.
- b) Precision Prevention Rule (PPR) - Using data from the DoD Crisis Line and additional administrative and survey data, we aim to develop “precision prevention rules” and implement them in a clinical decision support tool that can assist the Crisis Line in targeting interventions and deploying resources across varying levels of SM risk. This



data-driven approach would use machine learning to optimize the matching of individuals with options from the available array of interventions, equipping DoD Crisis Line responders with the best possible strategy for efficiency and effectiveness in suicide prevention.

- c) Iteration and Model Improvement - As we will for the risk prediction model described above, we will commit to continuous data-driven iteration and improvement of this treatment matching model over time.

In sum, we propose a data-driven, evidence-based approach to continually enhance suicide risk assessment and risk mitigation. Crucially, this approach would maximize feasibility by leveraging and enhancing the military's substantial existing resources while applying state-of-the-art advances in the science and technology of suicide risk stratification and prevention. Implementing this platform would also generate a continuous stream of data and experience that would enable continual refinement and optimization of the strategy with the goal of substantially reducing the rate of suicide among Service Members.

Recommendations for the Department of Veterans Affairs

We no longer have the luxury of time. Thirty thousand warriors who survived the crucible of war lost their battle to mental health here at home. This is a National tragedy. In developing these plans, we must avoid bureaucratic pitfall of *Paralysis by Analysis!* These issues have been studied for decades now, and there are experts in the private sector, non-profit, and academic medicine whose life work has focused singularly on this issue. We do not need to spend years conducting feasibility studies and assessments to determine what the challenges and barriers to care are? We have studied this for twenty years and have completed studies and assessments that clearly articulate the solutions to these challenges. We know what needs to be done, we must now demonstrate the political will to implement the clearly defined low-hanging fruit solutions while we work on the long-term transformation of the VA that is required to meet the needs of Veterans in the 21st Century.

The VA budget has grown by 550% over the past 20 years, and this continued growth is not sustainable. Past performance is a strong indicator of future performance, there can be no reasonable expectation that the VA can solve this problem alone. Hundreds of billions of dollars were added to the VA budget over the past twenty years, and yet we still lose twenty Veterans each day to suicide, and this number could grow if there is transformative change in the manner in which we care for Veterans.

This is not a call for *Privatization*. It is, however, a strong recommendation to leverage and **engage the private sector which already cares for roughly 75% of the (19 million) Veterans in this country. Many of whom do not/ cannot/ or will not seek care at the VA.** The majority of our Veterans have always received their care from the private sector, with the VA traditionally caring for less than 20% of them. Many of those who die by suicide do not receive care from the VA and these deaths won't slow down unless we develop new and innovative



solutions. Moreover, we have a rapidly shrinking Veteran population which cannot support the type of major construction required by the VA if they were to suddenly have to care for millions of additional Veterans not currently being cared for by the VA. In addition, it would be irresponsible to spend billions of dollars on new brick and mortar clinics for Veterans when the number of Veterans in this country is rapidly falling. Since 2001 we have lost 30% of the 26 million Veterans who were alive in 2001, and this number will be further reduced by an additional 35% over the next 25 years. This will leave us with only 12 million Veterans in 2045. This massive reduction in the number of Veterans precludes our ability to sustain the massive investments (> 500% growth over the past 20 years) in infrastructure and budget growth we have seen for the past twenty years and demands that we develop 21st century solutions.

The VA has reinvented itself several times over its history, transforming from a system focused on caring for combat wounded from World War I, World War II, and Korea, into the first National healthcare system. In the 1990's it transformed again from an inpatient centric program to a primarily outpatient care model for chronic illness that was focused on an aging Veteran population. We are once again facing a transition point for the VA where it must shed its outdated infrastructure and bloated bureaucracy and replace it with a more flexible and adaptive model. One with Regional Centers of Excellence to care for our combat wounded as General Omar Bradley (the first VA Secretary) intended, and contracted partnerships between the VA and top tier academic healthcare systems and community health center to deliver care for chronic illness and routine care in community-based setting where the barriers to care have been eliminated.

According to the VA, the number of Veterans in the United States is rapidly diminishing. The number of veterans decreased by one-third from 26 million to 17 million from 2000 to 2019, according to the US Census Bureau,^{iv} and will be further reduced by 35% over the next 25 years to 12 million^v. The VA predicted it would care for 3.9 million in 2001 - with an overall budget of \$40B (with \$20.9B for medical care). That budgets have **increased by over 550% to \$270B in 2021 (with \$97B for medical care) over a period of time when the number of Veteran's in the country was reduced by 30%**. Notwithstanding these incredible budget increases, the VA still faces significant challenges in reducing Veteran's suicide, the timely processing of benefits, care for women who now make up 20% of our military, and crumbling infrastructure. Given the existing challenges facing the VA as it traditionally treats less than 20% of our Veteran population, it is inconceivable to expect the VA to take on the additional clinical burden for millions of additional Veterans not currently seeking care from them for a host of reasons. It is also unrealistic to consider adding billions of dollars in new infrastructure to an organization swamped with a surplus of decrepit buildings and real estate, while they simultaneously look at a significantly declining patient population.

The key to delivering effective healthcare, especially to the at-risk populations identified in the Presidents Military and Veteran Suicide Prevention Strategy, is through community-based programs with well-resourced clinical staff trained in evidence-based care.^{vi} Two of the President Biden's top five priorities in this new strategy focus on; "Enhancing Crisis Care &



Facilitating Care Transitions and Increasing Access to and Delivery of Effective Care”. The initiatives outlined in this strategy are well thought out, but I believe there will be significant challenges in their implementation if they continue to focus heavily on the VA for the solutions. For the past ten years, myself and many organizations have worked closely with some incredible people and talented clinicians from the VA, but the bureaucratic impediments have always prevented any true partnership from developing with the private sector where any meaningful reimbursement were made for care provided to our Veterans. Moreover, each of the past attempts at improving veteran choice or access to private care has been blunted by bureaucratic impediments.

If we truly wish to rapidly expand evidence-based care for mental health and brain injuries for at-risk Veteran populations and those not currently receiving care from the VA, which is roughly 75% of our Nation’s Veterans, then we must quickly implement a two-pronged approach engage existing top tier healthcare systems and Community Based Health Centers. This will require:

1. Competitive and fair market funding reimbursements that are well above the poorly reimbursed Medicare rates.
2. Streamline referral process to approved VA Community Care Network private sector providers that allow direct access to mental health care without having to go through a protracted process of VA provider assessment and approval before a referral can be made.
3. Implementation of a national training program run by the VA to ensure that each of these institutions have clinical providers delivering evidence-based care.

These three recommendations are all achievable. Home Base and other organizations have already completed the proof of concept for this and proved the economic feasibility as the cost of this contracted force is one tenth that of establishing a clinic. In addition, the VA does not pick up the long-term retirement expenses of a larger Federal workforce. With limited financial resources Home Base created clinical partnership programs with two existing Healthcare Systems in Florida, trained their clinical team members in evidence based mental health trauma care, and purchased 50% of their time deliver care to Veterans at no cost. We are discussing a broad expansion of this care across Florida with the Governor and State Legislature, and similar partnerships are underway with Navajo Nation and the Governor of Arizona. Building this capability within these underserved communities also provides a clinical capability that does not exist for the general civilian population, where there is significant trauma from assaults, rapes, vehicle accidents and other related incidents.

A vision without resources is called a hallucination and for the past two decades our public-private partnerships supporting Veterans have been a hallucination. This has required the private sector to raise more than \$1B to fund care, support, housing, food insecurity, and job training for our Veterans. Each of these areas should have been funded by the Government that spent trillions of dollars sending them to War. This is not sustainable. There must be fair reimbursement for the care delivered at the top clinical programs for this to work, and this will



guarantee access to best care in the Nation- which is what these men and women have earned. In smaller community-based health centers, where culturally competent care is delivered to Veteran's from underserved communities, the VA should fund full time clinical staff and social workers resource specialists to assist with the many issues like unemployment, food and shelter insecurity, and other life issues that can often lead to suicide.

Military Families

The most overlooked casualties for these two protracted wars are our military family members. For everyone "Warrior" we know that there are three-five "Worriers." With more than 7,000 post 9-11 warriors killed in action, 30,000 more who died by suicide, and 1.8 million with permanently injured, it is clear that we have millions of military family members deeply affected by the physical and invisible wounds of war. In 2019 alone 202 military family members died by suicide. Private sector Non-Profits have traditionally filled the gap in support and service left by our government. Top among them is an organization called TAPS (Tragedy Assistance Program for Survivors), which cares for grieving military families. In 2008, TAPS recognized a growing trend in requests for care from families of military suicide. In response they developed a three-phased approach to a suicide "Post-vention" model to support more than 16,000 military suicide loss survivors.^{vii} It remains inconceivable to me that there are no dedicated Federal resources available to fund the clinical care for some of the most traumatized people affected by war. Given the previously cited concerns for further clinical expansion of Veterans, this care should be funded through partnerships with private sector programs already focused on the care and support of these highly at-risk spouses, parents, and children of our fallen heroes.

Despite the dedicated commitment of both the Department of Defense and Department of Veterans Affairs, the epidemic of veteran suicide not only continues but it appears to be growing. We continue to lose more than 20 veterans and 2 service members to suicide each day and have lost more than 100,000 to suicide since these wars began back in 2001. Less than 70% of young Americans age 18-24 do not meet the minimum requirements to join the U.S. military. Those that do, have successfully cleared the physical, mental, educational, or legal screening that precludes more than three quarters of military age young adults from serving. For this reason, the military members drawn from this top 25th percentile of our population historically have a lower rate of suicide, but this rate now shows that our warriors are 2-3 times more likely to die by suicide than their civilian peers. Particularly troubling is the fact that the suicide rate for Veterans ages 18-34, which constitutes bulk of our Soldiers and Marines at the tip of the fighting spear, has increased by 76% from 2005 to 2017.^{viii}

Summary

Given the multi-factorial nature of suicide, and the range of contributing factors, it is clear that there is no "silver bullet" solution to this complex challenge. That is why I believe that we need to shift our focus on the proactive efforts to:

1. Develop a far more sophisticated *Enhanced Risk Assessment Tool* to determine who is at greatest risk for suicide, and an *Enhanced Risk Mitigation Prevention Strategies &*



Precision Preventions Rules that will identify the right thing to do at the right time for the right person.

2. Fully achieve a public private partnership to heal the invisible wounds. As we look towards the response side of care we must always ensure that our warriors and families receive evidenced based care from culturally competent providers, and to guarantee that all warriors and Veterans have access to top tier evidence-based care there must be a transformational shift that allows for fluid access to the best possible care regardless of whether it resides in the public or private domain.



References

1. Hedegaard H, Curtin SC, Warner M. Suicide Rates in the United States Continue to Increase. *NCHS Data Brief*. 2018(309):1-8.
2. Suitt T. *High Suicide Rates among United States Service Members and Veterans of the Post- 9/11 Wars.*. Watson Institute International an Public Affairs, Brown University; June 21, 2021 2021.
3. Bossarte RM, Kennedy CJ, Luedtke A, Nock MK, Smoller JW, Stokes C, Kessler RC. New directions in machine learning analyses of administrative data to prevent suicide-related behaviors. *Am J Epidemiol*. 2021.
4. Ribeiro JD, Gutierrez PM, Joiner TE, Kessler RC, Petukhova MV, Sampson NA, Stein MB, Ursano RJ, Nock MK. Health care contact and suicide risk documentation prior to suicide death: Results from the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *J Consult Clin Psychol*. 2017;85(4):403-408.
5. Nock MK, Park JM, Finn CT, Deliberto TL, Dour HJ, Banaji MR. Measuring the suicidal mind: implicit cognition predicts suicidal behavior. *Psychol Sci*. 2010;21(4):511-517.
6. Bernecker SL, Zuromski KL, Gutierrez PM, Joiner TE, King AJ, Liu H, Nock MK, Sampson NA, Zaslavsky AM, Stein MB, Ursano RJ, Kessler RC. Predicting suicide attempts among soldiers who deny suicidal ideation in the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Behav Res Ther*. 2019;120:103350.
7. Zuromski KL, Bernecker SL, Chu C, Wilks CR, Gutierrez PM, Joiner TE, Liu H, Naifeh JA, Nock MK, Sampson NA, Zaslavsky AM, Stein MB, Ursano RJ, Kessler RC, Site Principal I, Army lc, Other team m. Pre-deployment predictors of suicide attempt during and after combat deployment: Results from the Army Study to Assess Risk and Resilience in Servicemembers. *J Psychiatr Res*. 2020;121:214-221.
8. Barak-Corren Y, Castro VM, Javitt S, Hoffnagle AG, Dai Y, Perlis RH, Nock MK, Smoller JW, Reis BY. Predicting Suicidal Behavior From Longitudinal Electronic Health Records. *Am J Psychiatry*. 2017;174(2):154-162.
9. Barak-Corren Y, Castro VM, Nock MK, Mandl KD, Madsen EM, Seiger A, Adams WG, Applegate RJ, Bernstam EV, Klann JG, McCarthy EP, Murphy SN, Natter M, Ostasiewski B, Patibandla N, Rosenthal GE, Silva GS, Wei K, Weber GM, Weiler SR, Reis BY, Smoller JW. Validation of an Electronic Health Record-Based Suicide Risk Prediction Modeling Approach Across Multiple Health Care Systems. *JAMA Netw Open*. 2020;3(3):e201262.
10. Kessler RC, Bauer MS, Bishop TM, Demler OV, Dobscha SK, Gildea SM, Goulet JL, Karras E, Kreyenbuhl J, Landes SJ, Liu H, Luedtke AR, Mair P, McAuliffe WHB, Nock M, Petukhova M, Pigeon WR, Sampson NA, Smoller JW, Weinstock LM, Bossarte RM. Using Administrative Data to Predict Suicide After Psychiatric Hospitalization in the Veterans Health Administration System. *Front Psychiatry*. 2020;11:390.



11. Kessler RC, Stein MB, Petukhova MV, Bliese P, Bossarte RM, Bromet EJ, Fullerton CS, Gilman SE, Ivany C, Lewandowski-Romps L, Millikan Bell A, Naifeh JA, Nock MK, Reis BY, Rosellini AJ, Sampson NA, Zaslavsky AM, Ursano RJ, Army SC. Predicting suicides after outpatient mental health visits in the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Mol Psychiatry*. 2017;22(4):544-551.
12. Kessler RC, Hwang I, Hoffmire CA, McCarthy JF, Petukhova MV, Rosellini AJ, Sampson NA, Schneider AL, Bradley PA, Katz IR, Thompson C, Bossarte RM. Developing a practical suicide risk prediction model for targeting high-risk patients in the Veterans health Administration. *International journal of methods in psychiatric research*. 2017;26(3).
13. Bayramli I, Castro V, Barak-Corrren Y, Masden E, Nock M, Smoller J, Reis BY. Temporally-Informed Random Forests for Suicide Risk Prediction. *medRxiv*. 2021:2021.2006.2001.21258179.
14. Ursano RJ, Colpe LJ, Heeringa SG, Kessler RC, Schoenbaum M, Stein MB, Army Sc. The Army study to assess risk and resilience in servicemembers (Army STARRS). *Psychiatry*. 2014;77(2):107-119.
15. Zuromski KL, Bernecker SL, Gutierrez PM, Joiner TE, King AJ, Liu H, Naifeh JA, Nock MK, Sampson NA, Zaslavsky AM, Stein MB, Ursano RJ, Kessler RC. Assessment of a Risk Index for Suicide Attempts Among US Army Soldiers With Suicide Ideation: Analysis of Data From the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *JAMA Netw Open*. 2019;2(3):e190766.
16. Brown JL, Swartzendruber A, DiClemente RJ. Application of audio computer-assisted self-interviews to collect self-reported health data: an overview. *Caries Res*. 2013;47 Suppl 1:40-45.
17. Gnamb T, Kaspar K. Disclosure of sensitive behaviors across self-administered survey modes: a meta-analysis. *Behav Res Methods*. 2015;47(4):1237-1259.
18. Kessler RC, Bossarte RM, Luedtke A, Zaslavsky AM, Zubizarreta JR. Suicide prediction models: a critical review of recent research with recommendations for the way forward. *Mol Psychiatry*. 2020;25(1):168-179.

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https://watson.brown.edu/costsofwar/files/cow/imce/papers/2021/Suitt_Suicides_Costs%20of%20War_June%2021%202021.pdf

ii https://watson.brown.edu/costsofwar/files/cow/imce/papers/2021/Suitt_Suicides_Costs%20of%20War_June%2021%202021.pdf

iii

<https://www.dspo.mil/Portals/113/Documents/CY20%20Suicide%20Report/CY%202020%20Annual%20Suicide%20Report.pdf?ver=0OwlvDd-PJuA-igow5fBFA%3d%3d>



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- iv <https://usafacts.org/articles/how-much-money-veterans-spending-us/>
- v <https://www.pewresearch.org/fact-tank/2021/04/05/the-changing-face-of-americas-veteran-population/>
- vi <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5240788/>
- vii <https://www.tandfonline.com/doi/pdf/10.1080/07481187.2020.1866241?needAccess=true>
- viii https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf