HIDDEN WOUNDS: EFFECTIVELY SUPPORTING VETERANS WITH TBI

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BEFORE THE

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OF THE

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C O N T E N T S

THURSDAY, MARCH 5, 2026

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SUBCOMMITTEE ON HEALTH,
COMMITTEE ON VETERANS' AFFAIRS,
U.S. HOUSE OF REPRESENTATIVES,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:15 a.m., in room 360, Cannon House Office Building, Hon. Mariannette Miller-Meeks [chairwoman of the subcommittee] presiding.

Present: Representatives Miller-Meeks, Bergman, Murphy, King-Hinds, Brownley, Cherfilus-McCormick, Conaway, and Dexter.

Also present: Representative Stauber.

OPENING STATEMENT OF MARIANNETTE MILLER-MEEKS, CHAIRWOMAN

Ms. MILLER-MEEKS. The Subcommittee on Health will now come to order. Without objection, the chair may declare recess at any time.

Before we begin, please join me in keeping the servicemembers deployed to the Middle East and in harm's way in our thoughts, as well as the families of the courageous servicemembers who recently gave their lives, to keep them in our thoughts and our prayers. Two of those individuals are from Iowa and deployed with the 103d Sustainment Command out of Des Moines.

I would like to welcome all members and witnesses to today's hearing. March is Brain Injury Awareness Month, so this is very timely and it is why I am also proud to be leading this hearing on how the U.S. Department of Veterans Affairs (VA) can continue to lead the way in the care for traumatic brain injury, or TBI. In a budget briefing last summer, the VA shared that TBI is the top clinical, legislative, and agency priority. I look forward to hearing how the VA has prioritized TBI so far and what we can expect for the rest of the year.

I am confident that the VA has all the data, legal authority, and funding it needs to effectively treat TBI. Right now, I believe the VA's main objective should be to build on the quality of data and the quality of care for the veteran.

Here is what the VA does best: specialized treatment, rehabilitation, and research. After enrollment in VA healthcare, veterans are assigned to a primary care team. These primary care staff are trained on the issues unique to post-deployed veterans, and that includes TBI. I am pleased that TBI and other issues unique to vet-

erans are part of the primary care experience at the VA, not a specialty that requires extra steps.

VA polytrauma centers are a key resource for veterans with TBI. At these centers, the VA is not just treating, but leading in outpatient and inpatient care for veterans with TBI and, in fact, their treatment model will probably become state-of-the-art across the United States. The centers in Richmond, Tampa, Minneapolis, Palo Alto, and San Antonio are knowledge hubs for other facilities treating polytrauma nationwide. This is important infrastructure to treat veterans diagnosed with complex multi-trauma injuries, including TBI.

The VA's research enterprise is also unmatched. One longitudinal research program, LIMBIC, examines the effects of and treatment for service-connected TBI with a focus on long-term effects of mild TBI. The LIMBIC goals are, one, to learn more about how concussion affects the brain; two, find out effects of concussion later in life, such as risk for dementia; three, see if some servicemembers and veterans are more likely to be affected or have a predilection for; and, four, identify the best treatments for concussion.

VA researchers at this center have documented links between combat concussions and dementia, Parkinson's disease, chronic pain, opioid use, and suicide risk. They have also developed specialized diagnostic tests using questionnaires, physical exams, brain imaging, fluid biomarkers, and electrophysiology to probe how the brain recovers from injury. With these systems in place, as a physician, I believe the VA can evaluate veterans with TBI and can enact intervention earlier.

I have heard many veterans share their positive experiences with the VA. Indeed, a report by the VA Office of Inspector General (OIG) about TBI treatment at one facility revealed that the facility was provided needed care for veterans with TBI. Unfortunately, I have also heard from veterans that that has not been their experience at the VA. Here is where I have seen the VA needs improvement: consistent quality in patient care and data.

In January, the VA OIG released a report about a patient who died by suicide after receiving mental healthcare at a VA facility. Among the reviewed concerns, the VA OIG found that the VA facility did not provide adequate follow up for the patient's TBI. This veteran was a middle-aged male with a history of mental illness, migraines, chronic pain, and gait disturbances with documented falls. In other words, his was the classic clinical picture of an individual with TBI. Yet somehow the patient did not receive follow ups specific to TBI and his mental health only declined until the end.

Fortunately, the facility in question now requires annual training on TBI screening and care consultations. I wish this had been the case sooner, but at least it is the case now.

At another facility, the OIG found that a veteran who had screened positive for TBI and died by suicide failed to receive adequate care at the VA. Among other issues, faculty staff did not submit a consultation for a TBI evaluation following the veteran's positive TBI screen, even though a consult is required.

This is not acceptable. These veterans earned TBI care at the VA and their service demands better from all of us. Their service de-

mands consistency and quality care. They deserve to know that the VA has their back. While quality inpatient care is the most urgent need, quality and data is also necessary. In the past, annual congressional reports have reflected outdated information and the number of inpatient beds dedicated to TBI. Reports have also omitted key spending information and the number of veterans with TBI treated annually.

Some might say, does it matter? Well, these numbers show the VA's capacity to provide care. These numbers should reveal the needs of the patient population and how a medical center is able to meet those needs. Congress needs this information to know what resources to allocate to the VA for TBI care. The VA also needs to get these numbers to determine the resources a hospital should get.

I know the VA has the capability to report this kind of data. Like I said, VA has all the data it needs. It must capture that data consistently and then be able to translate that information into clinical practice. Otherwise, wrong data takes resources away from areas of need, and I look forward to hearing from the VA about how they are going to put this into practice.

Under my leadership, veterans health has always been this subcommittee's priority. We must eliminate preventable errors. As a practitioner and a 24-year Army veteran, I know excellence is possible and it is imperative. The one who bears the cost of shortfalls is always, always the veteran.

This also means positioning the VA to support the veteran of contemporary and future warfare. This is where I see opportunities for the VA. We may not know the landscape of tomorrow's battlefield, but with the right systems and the right people in place, the VA can navigate and pivot to whatever lies ahead.

Finally, while we may not discuss it extensively today, I want to recognize the veterans who use residential rehabilitation for TBI. This population is small, but it is far from invisible. I appreciate efforts by the VA's geriatrics and Extended Care Program to address the needs of these veterans, and I will take the opportunity I can, to ensure that these veterans get the care they deserve from the VA.

Under the leadership of Chairman Bost, President Trump, and Secretary Collins, I am confident that the VA's role as a premium care provider for veterans with TBI. While the VA is on mission, it is the best in the business for veterans with chronic and sometimes catastrophic injuries, visible and hidden.

I now yield to Ranking Member Brownley for any opening remarks she may have.

OPENING STATEMENT OF JULIA BROWNLEY, RANKING MEMBER

Ms. BROWNLEY. Thank you, Madam Chair, and thank you for your words with regards to our six servicemembers who died proudly serving our country. I appreciate it very, very much.

Traumatic brain injuries are one of the most common service-related injuries facing veterans today. Even mild TBIs can lead to lifelong complications and challenges for veterans who have sustained them. As our understanding of TBIs and their risk and our ability to diagnose them, we must ensure that VA is equipped to

treat and care for veterans with TBIs at all points of their recovery journey. I am looking forward to hearing more from our VA witnesses about the current approach to care and a treatment, as well as future developments the VA is working toward.

TBI is not an illness that goes away with medicine, nor is it an injury that heals with bandages. It is a long-term chronic condition for which many veterans need ongoing, integrated, and well-coordinated care to manage symptoms and make strides toward recovery. That is why, as the largest integrated healthcare system in the United States, VA is well suited to provide the level of care that veterans with TBI need.

Through its Polytrauma System of Care, veterans receive specialized, interdisciplinary, customized care for any and all injuries and conditions related to their service, including TBI and any co-occurring conditions. With its tiered hub-and-spoke model, the system is designed to provide care to veterans wherever they are and whatever level of care is appropriate for them.

I expect we will hear from some witnesses today that legislation like the Veterans TBI Breakthrough Exploration of Adaptive Care Opportunities Nationwide (BEACON) Act is necessary to fill gaps in VA's care. I do not disagree that veterans may need support from several different avenues to support their recovery journeys, and I do not discount the role that nonprofits and academic affiliates play in facilitating and supporting that care. However, I need to draw the line at legislation that will take money from existing VA programs and redirect it to outside organizations and providers to do essentially the very same thing VA is already doing, but with fewer guardrails and fewer requirements to ensure quality of care.

The BEACON Act contains several concerning provisions. First, the bill would divert funding from both VA general mental healthcare programs and the National Center for Post-Traumatic Stress Disorder (PTSD) to establish grant programs for outside entities. This funding is intended for both the provision of mental healthcare and to advance the study and treatment of PTSD. Although many veterans with TBI also suffer from associated mental health conditions or PTSD, it is simply not appropriate to fund outside entities to provide care using these sources.

It is very difficult to understand this funding structure as anything other than a drain on the resources that VA can use to provide direct care to veterans who need it. One of the grant programs even requires VA to contract with a third party entity modeled after its own National Center for PTSD to administer the grants. If we are serious about expanding TBI treatment funding and research for veterans, why are we asking a third party entity to copy what VA is already doing instead of giving VA the resources it needs to do this itself?

Second, eligible entities are expected to use the funding under these grant programs to conduct clinical trials related to TBI. However, the bill does not establish sufficient uses of funds or require sufficient scientific rigor to ensure the outcomes of the clinical trials are usable. Further, not only all of the eligible entities are equipped or have the necessary experience to conduct robust clinical trials.

VA's existing research infrastructure is better suited to conduct these trials and already does. There is nothing stopping academic institutions and community providers who wish to treat veterans from working with VA through its academic affiliate network or the Community Care Program.

Taken together, these concerning provisions of the BEACON Act represent an effort to diminish VA's direct care program and research enterprise and create no strings attached handouts of VA's funding to private companies. Not only is this wasteful and duplicative, but it could lead to a further fracturing of continuity of care for veterans.

On that note, I ask unanimous consent to enter into the hearing record this article from the American Prospect that expands on many of the concerns I have just raised.

Ms. MILLER-MEEKS. No objection.

Ms. BROWNLEY. As our understanding of TBI's diagnosis and how to treat it evolves, I am confident that VA's TBI model of care will evolve with it. In fact, I believe that many colleagues on this committee will continue to provide robust oversight and direction to ensure that it does. What VA does need is the resources and support to continue to build on its existing System of Care. Legislation like the BEACON Act will only run counter to those efforts.

This hearing is an excellent opportunity to hear directly from veterans with TBI about their experiences and where VA's care can improve. I look forward to hearing from the witnesses on Panel 2 about how we can achieve our shared goal of improving TBI care at VA. I hope we will all keep in mind that the investment we need to make in VA's existing care model to achieve that goal.

With that, Madam Chair, I yield back.

Ms. MILLER-MEEKS. Thank you, Ranking Member Brownley.

I would now like to introduce the first panel. Testifying before us on behalf of the VA, we have Ms. Rachel McArdle, deputy executive director of Rehabilitation and Prosthetic Services at the VA. She is accompanied by Dr. Joel Scholten, executive director of Physical Medicine and Rehabilitation Services at the VA.

Dr. McArdle, you are now recognized for 5 minutes to present your testimony.

STATEMENT OF RACHEL MCARDLE

Dr. MCARDLE. Chairwoman Miller-Meeks, Ranking Member Brownley, and members of the subcommittee, thank you for the opportunity to speak with you today about the Department of Veterans Affairs' efforts to support veterans living with traumatic brain injury, or TBI. I am joined today by Dr. Joel Scholten, executive director of Physical Medicine and Rehabilitation. Together, we are honored to share how VA is addressing the complex, lifelong needs of veterans with TBI through comprehensive care, research, and innovation.

TBI remains one of the most challenging injuries faced by our veteran population. It can occur from a blow to the head, rapid acceleration, deacceleration, or blast exposure, and Its effects vary widely, from headaches and dizziness to memory problems, mood changes, and physical impairments. TBI rarely occurs alone. Many veterans experience co-occurring PTSD, chronic pain, or sleeping

difficulties, which complicate diagnosis and treatment. Understanding these overlapping conditions, if we are to effectively support veterans at every stage of their lives, is essential.

We also recognize the growing significance of military occupational blast exposure, or MOBE, repeated exposure to jets, artillery fire, or breaching operations. While these exposures may not cause immediate symptoms, they can have cumulative effects that resemble TBI and lead to long-term challenges with employment, driving, and interpersonal relationships. As we better understand the scope of MOBE, VA is committed to adapting our care system to meet these evolving needs.

VA has built an integrated nationwide system to ensure veterans with TBI receive comprehensive personalized care. At the center of the effort is the Polytrauma System of Care, which includes 5 Polytrauma Rehabilitation Centers, 23 Polytrauma Network sites, and numerous polytrauma support clinics. Together they support over 110 TBI teams across VA.

Since 2007, VA has screened 1.8 million veterans, post 9–11 veterans, for TBI, connecting them with specialists for evaluation and treatment. In Fiscal Year 2025 alone, VA treated more than 160,000 veterans with TBI-related conditions. Every veteran receives an individualized plan addressing physical, cognitive, and emotional needs, often integrated with mental health services and patient-centered care approaches to support recovery and resilience.

We are expanding access to care through tools like VA's Concussion Coach Mobile app as well as telehealth and virtual rehabilitation programs that ensure veterans, including those in rural or underserved areas, can achieve TBI care when they need it.

VA's commitment extends beyond clinical care. Research and innovation remain central to improving long-term outcomes for veterans with TBI. VA supports multiple research programs, including Long-Term Impact of Military Relevant Brain Injury Consortium and the Translational Research Center for TBI and Stress Disorders. These efforts advance precision diagnostics, identify biomarkers, and develop interventions, including understanding the cumulative effects of repeated blast exposure.

The Brain Health Coordinating Center serves as VA's central hub for advancing brain health. It integrates data from across our medical centers to identify risk factors, track outcomes, and support new clinical trials in diagnostics and therapeutics. Our academic affiliations and participation in TBI model systems ensure VA remains a leader in evidence-based rehabilitation and that new research is rapidly translated into better care for veterans.

Despite these advancements, challenges remain. There is still no single test capable of distinguishing symptoms caused from TBI from those caused by other health conditions and many veterans with mild or repeated TBIs continue to experience persistent symptoms that are difficult to treat. To address this, VA is advancing Total Brain Diagnostics, a precision brain health initiative to identify and validate biomarkers that improve diagnosis of complex conditions, including TBI.

Looking ahead, VA will continue to enhance blast exposure documentation, expand brain health approaches, strengthen telehealth

and intensive outpatient rehabilitation programs, and deepen relationships with academia, Veterans Service Organizations (VSO), nonprofits, and the Department of War. Above all, we remain committed to proactive veteran-centered care that supports long-term health and prevents functional decline.

In closing, VA is steadfast in our commitment to delivering world-class care, advancing research, and supporting veterans and families affected by TBI.

Thank you for your leadership and for your continued support. We look forward to your questions.

[THE PREPARED STATEMENT OF RACHEL MCARDLE APPEARS IN THE APPENDIX]

Ms. MILLER-MEEKS. Thank you very much.

As is my typical practice, I will reserve my time until all other members have had a chance to ask their questions.

I now recognize Ranking Member Brownley for 5 minutes for any questions she may have.

Ms. BROWNLEY. Thank you, Madam Chair, and thank you for your testimony this morning.

Dr. McArdle, what are some examples of things VA would be able to do within a—pardon me?

Ms. MILLER-MEEKS. I wanted to recognize your member.

Ms. BROWNLEY. Oh, go right ahead.

Ms. MILLER-MEEKS. It is already done.

Ms. BROWNLEY. Oh, okay. I will start from the top. What are some examples of things VA would be able to do with an additional $60 million in funding to advance the care provided to veterans with TBIs?

Dr. MCARDLE. Thank you for the question, Ranking Member Brownley. It sounds like you may be referring to the pending legislation that VA testified on in January. As to how would VA spend an additional 60 million, we are grateful for the support of this committee. I will take that question back for the record in order to conduct a full and appropriate review of our programs for you.

Ms. BROWNLEY. Would you say that VA needs $60 million additionally to properly serve our veterans?

Dr. MCARDLE. I appreciate the question. My focus today is to share with you what we are doing in TBI and I will follow up with your office.

Ms. BROWNLEY. Okay. All right.

Dr. Scholten, can you expand on VA's integrated approach to treat both TBI and co-occurring conditions, including PTSD? How does this affect veterans' outcomes, and I want—and this is the important part of the question, especially compared to individuals who may be navigating care outside of the VA?

Dr. SCHOLTEN. Thank you for that question, Ranking Member Brownley. As you point out, TBI and PTSD commonly co-occur in veterans. VA research has shown that veterans who participate in evidence-based therapies for PTSD also show improved cognitive functioning both in regards to their PTSD and/or TBI symptoms. This highlights the importance of our approach of developing an individualized plan of care for every veteran with traumatic brain injury.

As each veteran has a unique presentation, therefore their plan of care should be individually developed. Any efforts we can do to better integrate care delivery will likely result in greater impact on symptom reduction and treatment reduction.

I would also like to point out that it is incredibly important to engage with a veteran's family and their caregiver. Integrated care relies on keeping the veteran informed and at the center of the care plan with input and assistance from their caregivers and families. That care is obviously easier to provide when it is provided within the VA healthcare system, as we are focused on providing wrap-around services for veterans with traumatic brain injury.

Ms. BROWNLEY. Thank you. Can you describe VA's approach to addressing the differences in TBI symptoms and experiences between men and women veterans?

Dr. SCHOLTEN. Thank you for the question. Yes, we have a very large research program. As was mentioned earlier, VA allocates over $50 million to research in Fiscal Year 2025 to 175 research programs. A specific example that we have learned from our VA research includes understanding the unique effects that women might experience compared to their male counterparts.

One significant difference is the cumulative trauma exposure. We have found that female veterans have a much higher trauma burden, disproportionately affected by military sexual trauma and intimate partner violence (IPV). Therefore, we need to screen for military sexual trauma as well as IPV, and better incorporate mental health treatments into the individualized care plan.

In addition, the LIMBIC study, which was mentioned earlier in the opening statements, has shown that female veterans with a history of at least one TBI present with worse psychological health outcomes in the areas of PTSD, depression, TBI symptoms, and quality of life, again highlighting the importance of an individualized care plan that addresses the unique needs of that veteran.

Ms. BROWNLEY. Thank you for that and I yield back.

Ms. MILLER-MEEKS. Thank you, Ranking Member Brownley.

The chair now recognizes Representative King-Hinds for 5 minutes for any questions she may have.

Ms. KING-HINDS. Thank you, Chair. Thank you to you, Dr. McArdle and Dr. Scholten, for being here and hopefully have a conversation about this future of some of these research programs that are on the way.

I had prepared remarks, but I was coming here, this very decorated war hero from the Northern Marianas came to mind. He is actually a good friend. He is my neighbor and he is suffering from TBI, but he is having a challenge connecting the TBI to his service. He served in the Iraq War and he was exposed to a lot of toxins, which he believes has contributed to some of his injuries. The last time I saw him, you know, he was sharing that if you were to describe his pain level 1 to 10, it is a 12. You know, the solution that is given to him is just more pain meds. Right?

I kind of wanted, because we are talking about advancing research, I kind of wanted to hear a little bit more from you, whether you are considering whether traumatic brain injury linked to toxic exposure should be evaluated for presumptive service connection. If not, what specific evidentiary threshold is preventing that? He has

been going through this process and every time he files the claim, it seems like he has run out of options. I just want to find a way to help him out.

Dr. SCHOLTEN. Thank you for that question and thank you for sharing that story. First, I would like to point out that I can talk about the clinical presentation of the individual that you mentioned. I am unable to comment on the presumptive ratings as VA has a process that they work through in studying the research evidence to determine those.

I will say that veterans—VA screens all post 9–11 veterans for possible traumatic brain injury. Those individuals with a positive screen are referred to a TBI specialist to complete a thorough clinical history and physical examination to document or come up with a diagnosis. As part of the healthcare system and as part of that evaluation, an individual plan of care is developed. Hopefully, that individual will also have completed the toxic exposure screening that VA offers for every veteran and repeats every 5 years.

We know that each individual veteran has a unique presentation. Toxic exposures and other traumas that veterans may experience during their military service can affect the trajectory of their clinical recovery as well as their symptom presentation. Helping to devise a comprehensive evaluation and then coming up with a plan that will work for that individual veteran is essential.

Ms. KING-HINDS. Okay. Can I just ask a more directed question? Is there research currently underway examining whether toxic exposures, including burn pits, can contribute to a worsening brain injury—to a worse brain injury?

Dr. SCHOLTEN. I cannot—yes, there are certainly a number of research projects that are ongoing about long-term effects of toxic exposures. We can work with our colleagues back at Veterans Health Administration (VHA) to provide you a complete list.

Ms. KING-HINDS. Okay. That would be great. Just for my personal clarity, at what point in the primary care process is a veteran referred to a specific TBI treatment?

Dr. SCHOLTEN. That would occur on the veteran's first entrance into VHA for healthcare. The TBI screen would be completed and then that would trigger the evaluation or referral to a TBI specialist.

Ms. KING-HINDS. Okay. Just one last question. How could we better support your efforts to be able to better screen and provide the services that our vets need?

Dr. SCHOLTEN. I would say that this hearing is a perfect example, raising awareness of TBI and veterans. Also, acknowledging that, as was mentioned, March is TBI Awareness Month, and we would appreciate your assistance in encouraging all veterans to enroll in VHA for healthcare. We know that not all veterans do take advantage of that opportunity, but we would encourage you to help us spread that message to choose VA for healthcare.

Ms. KING-HINDS. Thank you for your time.

I yield back.

Ms. MILLER-MEEKS. Thank you, Representative King-Hinds.

The chair now recognizes Dr. Conaway for 5 minutes for any questions he may have.

Mr. CONAWAY. Thank you. Thank you, Chairman Miller-Meeks and Ranking Member Brownley, for gathering us here today to discuss the treatment of traumatic brain injuries.

As traumatic brain injuries become more common in the veteran population due to more exposure to service-related risk factors, like blast injuries, it is crucial that we discuss how to advance TBI treatment at the VA. The VA has a long history of medical breakthroughs and innovation. VA, in fact, ranks as a top research institution and, for the last 20 years, has conducted significant research relating to TBIs. Additionally, through its Polytrauma System of Care, VA can provide integrated care to address TBI as well as co-occurring injuries and conditions, including mental health conditions.

Dr. McArdle, can you explain how the VA's tiered Polytrauma System of Care is well suited to address the healthcare needs of veterans with TBI, even in areas that do not have a Polytrauma Rehabilitation Center in the immediate area?

Dr. MCARDLE. Thank you for the question. VA Polytrauma System of Care has been in existence for over 20 years and was designed to ensure all veterans who are enrolled in VA healthcare have access to TBI experts. This System of Care has over 110 TBI clinical teams across VHA providing individualized care for veterans with TBI. For veterans who are in more rural or highly rural areas, we also utilize virtual care to expand the availability of services through the lifetime of a veteran who is dealing with the chronic symptoms associated with TBI. Our primary focus is on making sure veterans get the care they need, whether that care is direct care or care provided by the community.

Mr. CONAWAY. Thank you. Can you elaborate on some of the advances? Again, a large research institution with a huge patient population and big data that can be brought to bear. Can you talk about how the standard of care for diagnosis and treating traumatic brain injuries has resulted from the VA's own research?

Dr. MCARDLE. I will let Dr. Scholten, who oversees the polytrauma TBI System of Care and is a practicing TBI physician, provide you more information.

Mr. CONAWAY. Thank you. Doc.

Dr. SCHOLTEN. Thank you for that question. Again, I would like to recognize the incredible research infrastructure that VA does possess.

A number of findings have emerged over the course of the last 20 years of the VA's research portfolio. We have identified a number of areas to improve veteran access for care. One of the things we—in research findings and knowing the high prevalence of TBI exposure for veterans returning from the post 9–11 conflicts, VA implemented the TBI screen and evaluation process to make sure that any veteran who served after September 11, 2001, was actually screened for possible TBI, and then evaluated by a specialist to ensure that their medical record was documented with a specific diagnosis and individualized treatment plan.

We have leveraged emerging findings showing that we do know veterans with TBI, compared to their civilian counterparts, have a higher comorbidity of mental health conditions. That has led our efforts to beef up our mental health integration within our TBI and

polytrauma teams. We are really trying to, in that effort, normalize or destigmatize the fact that mental healthcare is required for physical rehabilitation. We have also found with the heavy symptom burden, particularly for some of our special operators who experience rapid deployments in complex combat operations, that they require intensive evaluation and treatment.

VA stood up with a combination of those research findings, the Intensive Evaluation and Treatment Programs (IETP) at our five Polytrauma Rehab Centers. We have expanded that over the past 5 years to ensure—or to improve access to those that intensive programming for veterans and servicemembers who need it.

Mr. CONAWAY. Thank you for that. I will have to run to another hearing, but I did want to just raise some issues about how certain programs are funded. The BEACON Act, which will be discussed by our second panel. Unfortunately, I might not be here for all of it. One of the grant programs would award eligible grantees $5 million per year to conduct research for TBI veterans. The second grant program would require the VA to enter into an agreement with a further third party organization to administer a grant program to study and implement treatments of TBI veterans. The program will be funded by diverting existing VA clinical care funds. We know the VA has already undertaken clinical trials and research into new TBI treatments.

When considered, I will ask and get to it, and that is the diversion of funds within the VA to other programs does concern us. Do you have a concern that these diversions would interfere with the work that the VA is doing? That is, I would rather see you get the additional funds rather than diverting funds from other VA programs. Any thoughts on that?

Dr. MCARDLE. We appreciate the question, Congressman. We will have to take that for the record.

Mr. CONAWAY. Thank you.

Ms. MILLER-MEEKS. Thank you very much, Dr. Conaway.

The chair now recognizes Dr. Murphy for 5 minutes for any questions he may have.

Mr. MURPHY. Thank you, Madam Chairman. Got a lot to cover real quick.

Dr. Scholten, you said you practice, correct?

Dr. SCHOLTEN. Yes, I do.

Mr. MURPHY. What do you do for TBI and PTSD patients who have basically failed your cut and—cookie-cutter approach to just TBI? What do you do when people come to the end?

Dr. SCHOLTEN. Well, I personally, in my clinical practice, again, as was mentioned earlier, do a thorough history and evaluation, come up with a definitive diagnosis, and then develop an individualized treatment plan. That plan considers what interventions—first it considers which symptoms are most problematic for the individual veteran based on their functional ability, their ability to work and access the community. Then we discuss what interventions have been tried and what other opportunities——

Mr. MURPHY. Let me just get to the chase. What therapies do you offer these people that basic therapies do not work?

Dr. SCHOLTEN. Well, the therapies that are most commonly offered are the standard rehabilitation therapies of physical therapy,

occupational therapy, and speech therapy. It is critical to encourage or to evaluate the impact of mental health conditions and then offer appropriate evidence-based therapies to help with any diagnoses such as PTSD.

Mr. MURPHY. All right. Let me just get to the chase at an end. We get to the point where there is not really much that we offer to patients. Sadly enough, this is the part where suicide, this is the part where tragedy occurs with family. I think this is where personally I think the VA is failing to come into the 21st century and understand that there are modalities of treatment.

Are you by any chance familiar with the work of Dr. Shai Efrati in Israel with Hyperbaric Oxygen Therapy (HBOT) and PTSD, the voluminous work that he has with trauma with PTSD using hyperbaric oxygen?

Dr. SCHOLTEN. Yes, I have read some of those articles.

Mr. MURPHY. Your opinion?

Dr. SCHOLTEN. My opinion, along with that of VA and Department of War, is after thorough review of evidence on hyperbaric oxygen therapy, while there are a number of studies that have happened, the guidelines, current clinical guidelines, do not find sufficient evidence to offer HBOT for use of TBI. We can——

Mr. MURPHY. Are you familiar by any chance of the work of Dr. Joseph Maroon at the University of Pittsburgh who does the same work?

Dr. SCHOLTEN. I am not familiar with his part.

Mr. MURPHY. All right. Please, if you will, for professional education, please familiarize yourself with his work.

I would like to submit for the record a meta analysis done in the Frontiers of Neuroscience in October 2023, talking about the multiple, multiple studies that show hyperbaric oxygen for veterans for PTSD shows an improvement not only in clinical data and clinical wellness, but in physiological achievements.

Ms. MILLER-MEEKS. No objection.

Mr. MURPHY. You know, the American Academy of Pediatrics, in my opinion, was negligent in the fact that they created an institution, a generation of children, now adults, who are allergic to peanuts, because they refused, through their hubris, through their arrogance, to go back and see data was wrong. They for 20 years did not go back and do this. Same thing with National Institutes of Health (NIH), with the fact that we deprived women of getting Premarin and estrogen replacement, increase in cardiovascular disease, bone loss, and so many of these other things.

I believe the VA is being absolutely negligent and still living in 1950's and 1960's and 1970's science and not looking at real data in an era where we are failing our veterans that are, in my opinion, conducive—presenting conducive environments and allowing our veterans in an environment that creates for suicide. We are stuck back in saying that we are not right now. The VA may have had data back years ago, but look, I want you personally to read this paper. We are being—the VA is being negligent and not allowing veterans access to this treatment.

In North Carolina, there is an institution called HBOT for Heroes. They have treated over 250 veterans with, in my opinion, my clinical objective opinion, because I have scrubbed this data be-

cause as a surgeon, I am a skeptic first, that they have helped a tremendous number of our veterans where nothing else worked. I am tired of the cubicle captains at the VA still repeating the same rows over and over and over again, saying this does not work, when clinical data shows otherwise. You guys have a duty to our veterans to stop this massive suicide rate when we can intervene.

With that, I will yield back.

Ms. MILLER-MEEKS. Thank you, Dr. Murphy.

The chair now recognizes Dr. Morrison for 5 minutes for any questions she may have.

Ms. MORRISON. Thank you, Madam Chair. Thank you, Ranking Member Brownley. Thanks to our witnesses for being here today and for the work that you do on behalf of our veterans living with traumatic brain injury.

Dr. Scholten, you understand well that traumatic brain injury rarely exists as a single diagnosis. In practice what we see are veterans who are navigating a variety of challenges: cognitive symptoms, headaches, sleep disruption, chronic pain, depression, PTSD, and difficulties with memory, concentration, and executive function. A trend we have observed across patients is increasing medical complexity.

Veterans understand from their own lived experience that conditions often overlap and reinforce each other and evolve over time. Treating one in isolation can fall short of truly addressing their needs. That is why the model of care is so critical. One of VA's strengths is that it was built to address complex service-oriented conditions across a veteran's lifetime.

When we talk about TBI care at VA, we are not just talking about a neurology visit or a rehabilitation consult. We are talking about a system that integrates rehabilitation medicine, neurology, behavioral health, pain management, and social support. That integrated approach is especially important when we think about the kinds of injuries prevalent in modern military service. Many vets are exposed to blast injuries, repeated concussive events, and operational stressors.

The non-VA health systems do not have the expertise to anticipate or to understand. Understanding how the various exposures interact with mental health and other service-oriented—service-connected conditions is essential to providing effective care. The VA has built a system specifically designed for that challenge. Through the Polytrauma System of Care, veterans with complex injuries can access specialized rehabilitation centers, network sites, and support clinics that work together across disciplines.

From a clinical standpoint, that kind of coordination is rare and incredibly valuable. Those who have spent time navigating our health system know exactly how difficult it can be for patients to navigate fragmented systems where different specialties are all operating in silos. For veterans with TBI, fragmentation and a lack of military-informed treatment can mean delayed diagnosis, incomplete treatment, or symptoms that fall through the cracks entirely.

Another important part of this conversation is identification and long-term management. Over the past two decades, VA has screened large numbers of post 9–11 veterans for traumatic brain injury and continues to treat a significant population of veterans

living with TBI-related conditions. Many vets experience symptoms that fluctuate or become more apparent years after the original injury. This makes continuity of care and longitudinal follow up critically important and it also highlights why military-informed care is so essential. Providers need to understand the exposures veterans experienced in training and combat, the cultural context of military service, and the ways those factors influence both diagnosis and recovery.

Dr. Scholten, how important is it that traumatic brain injury care be integrated with treatment for other common co-occurring conditions?

Dr. SCHOLTEN. Thank you for the question. It is incredibly important that all of the factors, all the diagnoses, all the trauma and the exposures, that that individual veteran brings to the table that may affect their traumatic brain injury.

One thing I did not mention on the earlier question with research findings is that TBI is viewed now as a chronic condition, thanks in a large part to the ongoing research efforts through VA. What that means is that a TBI is not just a point in time. Veterans do not just come to a TBI rehabilitation clinic and have a silo of care and then move on and live the rest of their life. Instead that intensive evaluation and skilled treatment is focused on improving the veteran's symptoms, improving their functional ability and their ability to communicate, or participate in community activities.

Then when that has ended, we help transition veterans toward wellness activities because we know very well that long-term brain health is affected by a number of factors. In mitigating the chronic effects of a traumatic brain injury, it is essential to transition into a long-term brain health wellness plan or a brain health prescription, which we have recently developed and deployed through the VA.

Ms. MORRISON. Thank you for that answer.

Dr. McArdle, in your testimony you described VA's Polytrauma System of Care. What advantages does that model provide for veterans with complex injuries compared to more fragmented systems of care?

Dr. MCARDLE. Thank you for the question. VA's Polytrauma System of Care, the way it was established, to provide the individualized team-based care in the case management that comes with that. We utilize the wraparound care, the primary care, the mental healthcare, other specialties to optimize their entire care in order to optimize the outcomes that also are associated with TBI. The VA is uniquely set up to be able to do all of this in a single system.

Ms. MORRISON. Thank you. Really quickly——

Ms. MILLER-MEEKS. Thank you.

Ms. MORRISON. Oh, I am past my time.

Ms. MILLER-MEEKS. Your time has expired.

Ms. MORRISON. Thank you both for your service to our veterans. Thank you, Madam Chair. I yield back.

Ms. MILLER-MEEKS. Thank you very much.

I now yield myself 5 minutes for any questions that I might have.

Dr. Scholten, how long does a typical TBI screening take?

Dr. SCHOLTEN. Thank you for the question, Chairwoman. The TBI screen takes possibly 30 to 60 seconds to complete.

Ms. MILLER-MEEKS. Is this—the TBI screening that is done at the VA, is that similar to what you would do at Active Duty? Is it similar to what is done in the civilian workplace? As we know, TBI can occur from a variety of occurrences, not just those that are acquired in the military.

Dr. SCHOLTEN. Yes, our screen that we use in VA is similar to the screen used at the Department of War. It is different compared to the community because our patient population has typically sustained their traumatic event months to years previous. In the community, most TBI care is delivered acutely, you know, following a concussion or an accident. The screen is different.

Ms. MILLER-MEEKS. Since I am not on House Armed Services Service Committee (HASC), is Active Duty military, Department of War, are they now, given the knowledge we have about TBI, which was not the same when I was a nurse on a neurosurgical floor or even when I was director of Public Health in Iowa? The knowledge base has certainly changed. With that is the Department of War, are they screening for TBIs for those individuals that would be at risk or were in theaters where they were put at risk so that they have a seamless referral into the VA system?

Dr. SCHOLTEN. I know Department of War has an entire brain health program. However, I cannot answer for the that agency.

Ms. MILLER-MEEKS. Okay. It gives me another mission to take on here. What does the TBI treatment look like for future veterans, which was the genesis of this question, as the landscape and methods of war are constantly changing?

Dr. SCHOLTEN. Again, that would depend on the individual veteran, their presenting characteristics and presenting symptoms, as well as their cumulative trauma exposure as well as other exposures. The key is really taking that individualized history, looking at all the available documentation, coming up with a diagnosis, and then, again, that individualized treatment plan that is shaped in collaboration both with the veteran and their caregiver.

Ms. MILLER-MEEKS. What treatment protocol have you found to be the most promising in treating the whole neuropsychological syndrome of TBI?

Dr. SCHOLTEN. In my experience, and what the scientific literature would support, is integrated holistic care that is providing wraparound services. Given team-based care where the team actually has a chance to meet and discuss along with the veteran progress, prioritizing goals. Then the other important piece of that is ensuring that mental health experts are participating in that plan and supporting the veteran.

Ms. MILLER-MEEKS. If a veteran is remotely located from—so the polytrauma centers are all at major, I am going to say, academic VA medical centers. If a veteran is remote, i.e., in Iowa, it could be 2 hours away or 3 hours away or 4 hours away if they are in northwest Iowa, would this team approach be done virtually?

Dr. SCHOLTEN. Yes, it certainly can. In our Polytrauma System of Care, we see a little over 50,000 veterans in our TBI-specific clinics every year. Fifty-four percent of those veterans in Fiscal

Year 2025 had some type of virtual care offered to them throughout the year.

Ms. MILLER-MEEKS. To follow up on that, considering TBI to include mTBI, it may be more widespread given now screening, more widespread than previously understood. Does VHA have the capacity to treat our current and future veterans with the highest impact treatment protocol?

Dr. SCHOLTEN. Thank you for that question. As we mentioned, VA has over 110 specialized teams in the Polytrauma System of Care that are expert in assessing and—assessing, diagnosing, and then treating those veterans. We with those care plans that are developed, any care that is not able to be offered to that veteran in a timely manner can be utilized through our community care partners. Then we will take that information, integrate it back into the care plan to ensure a seamless care delivery.

Ms. MILLER-MEEKS. Thank you for acknowledging that. My time is about to expire, but can you estimate the proportion of the veteran population that likely has TBI, but has not been evaluated by the VA for TBI?

Dr. SCHOLTEN. I do not have a good answer for that. I can tell you that in the TBI screening and evaluation process, about 20 percent of veterans have a positive screen that then are referred on for a comprehensive evaluation.

Ms. MILLER-MEEKS. Thank you very much. I yield back my time.

The chair now recognizes General Bergman for 5 minutes for any questions he may have.

Mr. BERGMAN. Thank you, Madam Chair, and my apologies for being late. I was on the floor doing a memorial speech for a leader in my district who passed and who also happened to be my first cousin. If I sound a little—I do not have an emotional bone in my body, so I have been told, but I do have a lot of passion.

The passion is running hot right now, especially as I was coming up here finding out that some of my colleagues were attacking the BEACON Act. I am, you know, in God's grace and forgiveness, I will not talk about either a person's inability to comprehend what we are trying to do or a bias to prevent good things from happening. That will sort itself out in life. We all know who, if you spoke the words, you spoke the words. They are recorded.

I think about 20-plus years ago, when we had four polytrauma centers: Palo Alto, Minneapolis, Richmond, Tampa, the original four. When I was in uniform, I traveled to all of them because some of my Marines were in there for treatment during the time. When we think about here we are 20-plus years later, still trying, having made some advancements, but not nearly enough for the need and what the Veterans Administration is trying to do and what the BEACON Act does to help the Veterans Administration in a very positive way.

Anybody who uses the word "privatize" obviously has either no creative thought, no historical knowledge, or no vision of the future when it comes to treatment for veterans or the population in general. Because of the factor that if we are going to solve—and I do not know if solve is the right word, if we are going to diagnose and treat and the future treatments going forward for traumatic brain injury, we need to have all hands on deck. Anybody who uses the

word "privatize" obviously either does not care or has an alternative agenda. As my mother would say, shame on them.

Now, enough of that, because I was always taught to be positive. Let me ask you a question. Okay. Thanks to our doctors for being here.

Dr. McArdle, you describe the five Polytrauma Rehabilitation Centers and also a broader network, polytrauma network sites, support clinics, and over 110 TBI teams. What is the real difference in care a veteran gets at a Polytrauma Rehabilitation Center versus those other sites?

Dr. MCARDLE. Thank you for the question. I am going to defer it to Dr. Scholten who oversees the Polytrauma Network.

Mr. BERGMAN. Okay.

Dr. SCHOLTEN. The difference in the care provision at some of our larger centers is there are more rehabilitation and TBI-related assets, more intensive programming. Most of our intensive inpatient treatment programs are located at those five centers. That allows us to leverage the huge amount of expertise in clinical care not only for TBI, but also in expertise in other clinical areas to include neurosurgery, internal medicine, orthopedic surgery, and mental health to provide that intensive and expert level of care. Once if a veteran is not from that area and accesses one of those Polytrauma Rehab Centers, once they transition back to their home area, the System of Care is set up to have—to remain connected to that veteran so that they can return to their home area, access primary care and other specialties.

Mr. BERGMAN. Not to put words in your mouth, this is truly developing a network, a broad-based network of care. When you think about before the early 1980's, surgery centers did not exist. Pretty much if you wanted any type of surgery, no matter how minor, you had to go to a hospital, pretty much. Surgery centers that now do everything from lower back surgery to cataract surgery to all of those different things and have brought the care to the community in such a way that the patient result is better, the accumulation of knowledge in the providers is better. It is a success story. Anybody who opposes the BEACON Act in this case is seeking to, whether it is intentionally or accidentally, prevent better care for veterans.

With that, I yield back.

Ms. MILLER-MEEKS. Thank you, General Bergman.

The chair now recognizes Representative Cherfilus-McCormick for 5 minutes for any questions she may have.

Ms. CHERFILUS-MCCORMICK. Thank you so much, Madam Chairwoman. Thank you so much for being here.

This is like one of the main issues we have been having. In My VA, we had several suicides and making sure, our veterans can actually get the care they need is so important to us. We also have some concerns also when it comes to making sure the cultural competency that comes to the—our soldiers and our veterans are there and they are being provided. My question for you as we are looking at that, do you have any concerns and how would you address those concerns to make sure that every practitioner can actually be aware and to recognize certain things that are specific to our veterans?

Dr. SCHOLTEN. Thank you for that question. Cultural competency when it comes to healthcare delivery is critical. We know that in VA we have—we feel we have better veteran awareness or better awareness of military-specific issues. Our System of Care is developed so that it provides these wraparound services that can address those military-and veteran-specific issues.

As you know, suicide prevention is one of the—is our highest clinical priority within VA. Our Office of Suicide Prevention as well as our Office of Research and Development has focused their efforts in better understanding suicide risk as well as better understanding interventions to decrease—or to promote suicide prevention efforts. In our integrated system we can enhance as well as deliver that enhanced screening and treatment for trying to minimize the suicide risk for our veterans.

Ms. CHERFILUS-MCCORMICK. Well, that is also my question. When it comes to the screening process, it seems like the screening tools that lack reliability and biomarkers, what is the VA doing to improve diagnostic accuracy so veterans are not misdiagnosed or missed entirely and whereas veterans still are falling through the cracks?.

Dr. SCHOLTEN. As we mentioned earlier, VA's Office of Research and Development allocated 50 million in direct research funding for Fiscal Year 2025 research projects for traumatic brain injury. Part of those efforts are aimed at developing better biomarkers not only for traumatic brain injury, but also other co-occurring mental health diagnoses. As we work to better understand and better identify biomarkers not only for TBI, but also looking at those associated or affiliated risk factors that can enhance suicide risk, we will better be able to care for veterans as we take that information and turn it back into our healthcare system.

Ms. CHERFILUS-MCCORMICK. My next question is that the BEACON Act would establish new grant programs that shift funding to non-VA entities for TBI research and treatment. Why should Congress divert resources outside the VA instead of strengthening the VA's existing research infrastructure? How could outsourcing care impact continuity and suicide prevention efforts while also taking into context that cultural competency for our community care providers?

Dr. SCHOLTEN. Thank you for that question. VA does its best to provide that integrated care. However, there are times when the expertise does not exist in the VA or cannot be provided in a timely manner. It is important then that we do—where it is time-sensitive, where we do work with our community partners to get veterans in the community care network to get that piece of their care provided in the community. We need to integrate those results back into their treatment plan.

Ms. CHERFILUS-MCCORMICK. Now, do you believe that there is an advantage to having services done at the VA and that there is a way we can actually harmonize the two? Because the expertise, I guess the concern is that the expertise of the VA might be lost when our soldiers go—our veterans go into the community. Do you believe there is a way we can harmonize the two so we are not losing any expertise?

Dr. SCHOLTEN. As a 28-year employee of the Department of Veterans Affairs, as a healthcare provider, I think we are well positioned to—very well positioned to provide that wraparound care and leverage that military and veteran competency to maximize the results.

Ms. CHERFILUS-MCCORMICK. Now, are there any specific steps you would like to see Congress take to make sure that exists in all situations?

Dr. SCHOLTEN. As I mentioned earlier, we appreciate the ability to testify here today on VA's TBI programs. We appreciate the fact that this is helping to spread awareness about TBI and veteran-specific injuries, especially since March is TBI Awareness Month. We appreciate your help in encouraging veterans to enroll in VHA for care or to choose VHA for their healthcare.

Ms. CHERFILUS-MCCORMICK. Thank you. I yield back.

Ms. MILLER-MEEKS. Thank you, Representative Cherfilus-McCormick.

On behalf of the subcommittee, I want to thank you all for your testimony and for joining us here today. You are now excused and we will wait for a moment as the second panel comes to the witness table.

Welcome to all of our witnesses and thank you for your participation today testifying on such an important matter. In accordance with committee rule 5(e), I ask unanimous consent that Representative Stauber, who is not here yet, from Minnesota, be permitted to participate in today's subcommittee hearing. Without objection, so ordered.

On our second panel, we have Mr. Al Johnson, retired U.S. Army lieutenant colonel and a flight surgeon, who was present when the Iranians attacked Al-Asad Air Base in retaliation to neutralizing the Islamic Revolutionary Guard Corp (IRGC) terrorist Soleimani; Mr. Buster Miscusi, former U.S. Marine Corps sergeant and graduate of Operation Mend; and Dr. Rusty Gore, chief medical officer at Avalon Action Alliance. Once again, thank you all for your participation in today's hearing.

Mr. Johnson, you are now recognized for 5 minutes to present your testimony.

STATEMENT OF AL JOHNSON

Mr. JOHNSON. Thank you, Chairwoman Miller-Meeks and distinguished members of the subcommittee. Thank you for inviting me to testify today. My name is Al Johnson. I am a retired lieutenant colonel and physician assistant (PA) who served in the Army for over 27 years. I am testifying not on behalf of the Department of War, but in my personal capacity. I speak both as a military medical provider and as a patient that suffered TBI, someone whose life was permanently changed by a traumatic brain injury, in fact.

On January 8, 2020, while deployed to Al-Asad Air Base in Iraq, I was injured in one of the largest ballistic missile attacks on U.S. forces in the history of war. Iran fired 15 medium-range ballistic missiles at our base, each weighing roughly 1,500 pounds. I was sheltered in an indirect fire shelter which was not adequate for ballistic missiles. It was more designed for rockets and mortars. I have no memory of the first three impacts because I was knocked out at

impact number three. I came to just as impacts number four, five, and six were hitting the base. All of these were in very close proximity to my position, with No. 6 being 60 feet away from my position. That massive percussion wave knocked me unconscious for the second time that day.

The missiles struck occupied operational areas, resulting in damage to critical infrastructure and barracks. Environmental testing after the attack detected radioactive isotopes, heavy metals, and toxic chemicals at the site.

As a result of the missile attack, I have been diagnosed with a TBI, PTSD, cranial nerve damage causing double vision, insomnia, tinnitus, neck pain, everything that you can imagine that would come with a blast injury. I struggle emotionally with hypervigilance, depression, a sense of distance from the people I love and my friends. I am also in a thyroid surveillance program due to multiple thyroid nodules that have developed since the attack.

After the attack, and despite our own injuries, myself and my two medics immediately began treating other servicemembers, many who now live with injuries similar or worse than mine. One soldier, specifically Specialist Jason Quitugua, suffered a TBI that resulted in headaches, insomnia, PTSD, and severe depression. Sadly, he died by suicide on October 7, 2021. The injuries he sustained during the attack ultimately cost him his life.

Another was Chief Warrant Officer Thomas Caudill. I diagnosed his TBI using the Military Acute Concussion Evaluation (MACE) 2 screening tool available to us on the base and arranged for his medical evacuation. He was subsequently evacuated, had a Computed Tomography (CT) of the brain performed which was unremarkable, and returned to duty literally the same day back into theater.

Many soldiers passed the largely self-reporting screening and remained in mission-essential roles due to conscientious underreporting. They immediately began to assist in cleanup. Many other servicemembers now experience chronic medical and mental health conditions, including thyroid disease.

I have coauthored two different peer-reviewed studies on the servicemembers who were there. One showed that out of 583 exposed personnel, over 80 percent reported blast exposure and nearly half were still symptomatic a month later. Another identified 20 percent more TBI diagnosis a month after the attack than what were initially thought. People passed early screening because these tools often missed or delayed cumulative blast injuries.

Another soldier, Patrick Benn, was assisting in cleanup, ultimately diagnosed with thyrotoxicosis and underwent thyroidectomy after being exposed to the toxic chemicals. I am aware of multiple similar other cases in that cohort of soldiers that were on the base during that attack.

While improvements have been made since Al-Asad, prevention and early detection must be our first line of defense. Modern warfare involves repeated blast exposure in toxic environments, and our medical system must evolve to address those concerns accordingly.

Early identification is not only a medical issue, it is a compensation and access to care issue. Servicemembers injured in terrorist attacks depend on documentation to qualify for VA care and benefits. Due to recent legal rulings, many injured veterans are now unable to recover compensation from other sources that they once could. While injuries are missed, veterans lose both treatment and the support Congress intended. That is the commitment we owe the men and women who are injured in service to our country. Thank you for your time and continued commitment.

[THE PREPARED STATEMENT OF AL JOHNSON APPEARS IN THE APPENDIX]

Ms. MILLER-MEEKS. Thank you, Mr. Johnson.

Mr. Miscusi, you are now recognized for 5 minutes to present your testimony.

STATEMENT OF BUSTER MISCUSI

Mr. MISCUSI. Chairwoman Miller-Meeks and members of the subcommittee, thank you for the opportunity to speak today on behalf of veterans living with a traumatic brain injury.

Each veteran's injury and recovery is unique. They rarely follow a straight line. After years of living with this injury and walking alongside other veterans who bear a similar burden, I have learned that these stories, like history, may not repeat, but the patterns tend to rhyme. I am here today because my story is one of those patterns and because what helped me should not be the exception, but the rule.

Before my injury, I could tolerate chaos, process information quickly, and stay oriented to my environment and to the people around me. These skills were critical not just for success in the military, but for being a present husband and father. They allowed me to have a clear identity, a clear role, and a future that made sense.

After my deployment to Afghanistan in 2012, I was diagnosed with PTSD. After a brief sequence of cognitive behavioral therapy, I learned enough skills to get back in the fight. In 2015, I was diagnosed with Crohn's disease and sent to Wounded Warrior Battalion for medical retirement. During that process, I was also diagnosed with a traumatic brain injury from low blast exposure.

At first, I did not believe the TBI diagnosis. I had never been in an Improvised Explosive Device (IED) explosion. I had never been knocked unconscious. When I first joined the Marine Corps and was training to deploy to Afghanistan, low blast exposure was not something we talked about. We were not screened for it and we were not taught to look for it. Mortars, explosives, and overpressure in training environments were just part of the job.

In the infantry, headaches, confusion, explicit jokes, and anger were normal. We joked about bloody noses and ringing ears. We laughed off losing our hearing for weeks at a time. We assumed our inappropriate jokes and angry outbursts were part of the military culture. Back then, there was not anything that we thought could not be solved with sufficient nicotine, caffeine, and Advil.

By the time I reached Wounded Warrior Battalion in 2015, the understanding of brain injuries had changed. Now clinicians were looking for low blast exposure, and they were able to name what

I had been experiencing all along. Confusion was not a personal shortcoming. It was impairments in memory and information processing. Explicit jokes and anger were not part of the culture. It was a loss of cognitive filtering.

Going forward, the initial treatment plan helped. I was medically retired in 2018 and started college. Then everything collapsed again. I began having episodes where half my body stopped working. My face sagged, my speech slurred. When these occurred, I could not walk, talk, or eat. At first, these episodes happened almost daily. The VA ruled out a stroke. One doctor told me the engine still has power, but the transmission just keeps slipping out of gear. It was a good line and, in a way, it helped me understand what was happening. Understanding alone was not enough to restore function.

These episodes were associated with my brain injury and put my life on hold. I had to stop driving. I had to leave school. My symptoms worsened, and I fell into a deep depression. I began to believe I was a burden, that the meaning I had built my life around was gone. My wife refused to give up, continuing to search for help.

Eventually, we found University of California Los Angeles (UCLA) Operation Mend. Operation Mend treated my injury differently. They did not try to make it disappear. They worked with me, not on me, to learn skills and find resources to work with my limitations. Most importantly, they included my wife as an essential partner, recognizing that this injury does not affect one person alone. Previously, my wife had been rejected by the VA caregiver support program and struggled with burnout and caregiver fatigue. Operation Mend was the first time she was Included as an integral part of the care team. Recovery, like military operations, is a team effort. They understood that.

Operation Mend did not cure my TBI. I still live with migraines, stroke-like episodes, ringing ears, cognitive overload, and emotional volatility. What they restored was my sense of agency. My limitations are no longer evidence of failure. They are evidence of survival.

My story is not unique. Low blast exposure does not require an IED, loss of consciousness, or an infantry role. Many veterans and families are struggling to find the resources to develop the skills to learn to work as a team. Programs like Operation Mend, where symptoms are treated as challenges to work with rather than obstacles to destroy, and where caregivers are honored as integral partners rather than a dispensable afterthought, should be the gold standard of care across the VA. The capacity to provide this level of care already exists within the VA system. What is needed is organization, training, and recognition of veterans and caregivers as key stakeholders.

Who is responsible? The ones who know. I know what this injury feels like. I know what helped me and my family. Now that you understand it as well, the responsibility to act no longer rests with veterans alone.

Thank you.

[THE PREPARED STATEMENT OF BUSTER MISCUSI APPEARS IN THE APPENDIX]

Ms. MILLER-MEEKS. Thank you very much, Mr. Miscusi.

Dr. Gore, you are now recognized for 5 minutes to present your testimony.

STATEMENT OF RUSSELL GORE

Dr. GORE. Chairwoman Miller-Meeks, Ranking Member Brownley, and members of the committee, thank you for the opportunity to testify today. My name is Dr. Russell Gore. I am a veteran. I served as an operational flight surgeon in the United States Air Force. I am now a neurologist specializing in traumatic brain injury.

Today and over the past 12 years, my work has focused on treating veterans and servicemembers with mild to moderate traumatic brain injury and the common co-occurring disorders we have discussed today. These are complicated, persistent. These result in life impairments that are associated with significant impairments throughout the lifespan.

I want to start with a simple truth from the clinic and from the trenches. TBI is not a single event with a clear recovery timeline. For many veterans, it is a chronic condition with symptoms that can be delayed, misunderstood, or misattributed. Veterans with TBI struggle with impairments affecting function in the community and relationships at home and at work. These struggles are often invisible but impactful, resulting in isolation and fractured relationships, a combination leading to a loss of purpose, a loss of productivity, and often despair.

The VA's 2025 National Suicide Prevention Report states that the suicide rate for veterans was 35 per 100,000. Critically, the rate for veterans with TBI is much higher. A veteran with TBI is more than twice as likely to commit suicide than a veteran without TBI. Veterans with TBI are an astonishing 5.5 times as likely to commit suicide than the average American. TBI and common associated conditions are fueling an epidemic of veteran suicide.

As Dr. McArdle highlighted earlier, we are just starting to understand the scope of this TBI problem. The U.S. Department of Defense (DOD) reports 500,000 servicemembers have been diagnosed with TBI since 2001, but this number represents just the tip the of the iceberg. Many veteran—many injuries go unreported, and this number does not account for injuries due to repetitive exposure to blasts.

U.S. military tactics are highly kinetic and this is a battlefield advantage, but the kinetic nature with which we train and fight is injuring our servicemembers over time. Estimates suggest that 2 million have experienced a TBI, and the most robust clinical data available indicates that over 50 percent may experience chronic symptoms.

The VA has made meaningful progress addressing veteran TBI with some of the current initiatives also outlined by Dr. Scholten and Dr. McArdle earlier. I am privileged to serve on the Federal Advisory Committee overseeing VA neurotrauma, so I have experienced firsthand the compassion and tireless effort of VA clinicians managing this epidemic of TBI. Enhanced screening efforts in the Polytrauma System of Care have certainly helped many veterans.

Despite this progress, the VA cares for only two-thirds of veterans, and among veterans completing suicide, fewer than 40 per-

cent were seen in the VA the preceding year. Many veterans are not accessing TBI care within the VA. The reality is that VA TBI care, and indeed TBI care nationally, is currently fragmented. Veterans assessed for TBI often receive a series of disconnected referrals without a coordinated plan that treats the whole person. Veterans with persistent symptoms need an integrated pathway, comprehensive evaluation, individualized interdisciplinary rehabilitation, and reliable follow up. I see firsthand at the Shepherd Center every day what integrated brain injury rehabilitation looks like when it is done well.

In order to address these challenges, three organizations are offering treatment with intensive neurorehabilitation. This includes the VA's five polytrauma centers, the Avalon Action Alliance, and the Warrior Care Network. These three organizations are treating approximately 1,000 veterans with mild TBI per year. This is only a small fraction of the capacity necessary to treat the veterans who may benefit from this care. There is an urgent need to scale capacity. All veterans deserve access to evidence-based life-saving care, care that helps them return to family roles, school and work, care that restores function, care that restores dignity.

The BEACON Act offers the opportunity to provide funding for the research needed to urgently scale life-saving treatment. This legislation is designed to evaluate effective treatments and leverage civilian and academic TBI expertise that is aligned with the VA's mission. The BEACON Act will help us to identify what works, scale it, and make it available to more veterans. This is not an attempt to privatize care, but to complement VA research and clinical capacity by partnering with proven programs to reach veterans who otherwise are not being served effectively.

Here is what success looks like from my perspective. Approval of the BEACON Act to establish the efficacy of the intensive neurorehabilitation treatment model. Expand partnerships to increase VA capacity. Scale access to this treatment through reimbursement from government and private payers. Establish this treatment as the standard of care for any American suffering from chronic mild TBI.

Members of this committee, it is not the responsibility of the VA to stop this epidemic. It is our national responsibility. The VA should not have to do this alone. With smart, coordinated partnerships and targeted investment, we can reach more veterans earlier, treat them more effectively, and reduce veteran suicide.

Thank you for the opportunity to testify. I look forward to your questions.

[THE PREPARED STATEMENT OF RUSSELL GORE APPEARS IN THE APPENDIX]

Ms. MILLER-MEEKS. Thank you, Dr. Gore. I thank all of our witnesses for appearing here today.

As is my typical practice, I will reserve my time until all other members have had a chance to ask their questions.

I now recognize Ranking Member Brownley for 5 minutes for any questions she may have.

Ms. BROWNLEY. Thank you. Thank you to all the witnesses for being here and your testimony as well.

Mr. Miscusi, in your testimony you say that VA has the capacity and the platform to provide the type of care you received at Operation Mend. What, from your point of view, is holding VA back? Do you think that diverting $60 million from existing VA programs as the BEACON Act requires helps or hinders VA in implementing intensive outpatient programs like the one you have completed? I am grateful that you have had the treatment that you need.

Mr. MISCUSI. Thank you, Ranking Member Brownley. I cannot answer to how the money could be used, but I cannot answer to whether or not why I think that those resources are available. I am not engaged with the veteran—with the Veterans Health Administration on the level of understanding how things are organized. I do engage directly with their practitioners and I receive care from them, so I know that they care deeply. That is ultimately what is needed, is people who care deeply.

The thing that is missing is organization, I think. If these pieces could be organized together, I think that it could be effective. Operation Mend is a model of how that organization could occur where the money goes. Ultimately, I want it to serve veterans. That is what matters most.

Thank you.

Ms. BROWNLEY. Well, and I appreciate that. I think your point about in the VA they care is one of the primary reasons why veterans, if they have a choice, would prefer to go to the VA other than community care outlets. You know, I do not have any data to support that on the TBI issue necessarily, but generally, that is what veterans tell me every single day is they would prefer to be in the VA and under VA care. I appreciate that.

You have—you never attempted to try to get care in the VA with regards to your situation?

Mr. MISCUSI. I did receive care and I continue to receive care at the VA for the TBI.

Ms. BROWNLEY. Okay. Okay, very good.

Dr. Gore, in your testimony, you, also—well, you claim that the BEACON Act was written to supplement, not supplant, VA's existing clinical care and research. The bill is pretty clear to me as written that it would divert $60 million from the VA National Center for PTSD and Mental Health Services. I am trying to understand how that is not supplanting, but it is supplementing.

Dr. GORE. Thank you for that question. I see this as an opportunity for building partnerships, building capacity, and for establishing the evidence necessary to shift what we consider to be the standard of care for traumatic brain injury. This is a national problem. The VA and the work that we are doing with veterans is an opportunity to leverage the volume of individuals with traumatic brain injury and the resources available so that we can demonstrate that the standard of care needs to shift.

All of the downstream opportunities for folks to receive care and access to care are dependent on establishing a standard of care. The current standard of care for traumatic brain injury in this country, in particular mild to moderate injury, is to do nothing. That is scary. Folks in this room, your friends, your loved ones are affected by this every single day. They get no care when they have these injuries and are released from the Emergency Room (ER).

All of us are doing an amazing job just because we care and we are providing intervention. We need to establish a standard of care which is going to improve both VA care and care external to the VA.

Ms. BROWNLEY. What does that look like?

Dr. GORE. What that looks like for me is that veterans have an option to seek care in a place that they choose. In my experience, veterans are frustrated with the VA care that they receive. They receive multiple referrals from very well meaning providers, and those referrals are at different locations throughout their community. They are poorly coordinated. It is very difficult to execute on those plans.

This intensive program brings all of those resources under one roof and provides care, over 100 visits for care, over a 3-to 4-week period. It has been shown to work. The VA has actually modeled their IETP program after programs like mine at the Shepherd Center. We started doing this in 2006. What we have seen is that this seems to work.

The problem is the VA is treating fewer than 100 veterans per year in the IETP program. I heard 50,000 veterans a year are being treated in the VA for TBI. Just my basic math, 80 percent are mild and 50 percent of those have chronic needs. That is 20,000 a year that should have access to this care. It is less than 100 because most of the folks receiving that care are actually Active Duty servicemembers and mostly special operators.

I see providing access to this life-saving care as my personal priority and I hope that you will appreciate that.

Ms. BROWNLEY. Thank you. I yield back.

Ms. MILLER-MEEKS. Thank you very much.

The chair now recognizes Representative King-Hinds for 5 minutes for any questions she may have.

Ms. KING-HINDS. I want to start off by saying thank you to Mr. Miscusi and Mr. Johnson for your testimony today. I think when folks talk about traumatic brain injury, they do not really have a full idea of the lived experience. I want to be able to give you the opportunity to, one, share your thoughts as to if you had just one ask that Congress could do to make your life better. As somebody who has TBI, share that thought and, you know, give us a day in the life of what it looks like to live with this type of injury.

I will start with you, Mr. Johnson, and then we can go to Mr. Miscusi after.

Mr. JOHNSON. Thank you for your question and your comments, Representative King-Hinds. The comments you made earlier about the toxic exposure interest me more than you can imagine because that is our cohort.

Personally, my experience in dealing with my traumatic brain injury is I have been working in emergency medicine for—you know, in some capacity for 37 years. About 18 of that or 15 of that was as a sole provider in a rural community, which is a lot like tailgate medicine that you find on the battlefield. After my traumatic brain injury, however, I had to bench myself from being the only provider with two nurses in a rural setting because of my difficulties in complex—you know, navigating complex medical disease pathways and

things like that. That is how it has affected me personally. I cannot do what I love to do anymore.

If I had my one ask to Congress, and, believe me, it has taken me 6 years of dead end attempts to finally get in front of an audience that can maybe help the folks that were on Al-Asad that day. The toxic exposure has created a unique opportunity along with a traumatic brain injury cohort. You have got 147, 150 soldiers that were in one place at one time that all experienced the same exposure, blast exposure and toxic environment exposure. You talk about a control for a research program, you cannot ask for anything better than that.

The care that they need, here is the problem. When you have a 22-year-old, now separated soldier from the service because they were medically retired, that goes to their primary or their VA Community-Based Outpatient Clinic (CBOC) and says, hey, I think I was exposed, I am not really sure what I was exposed to, what do I need to do about it? A lot of times it is nothing. These individuals should be getting baseline screening for cancers. They should be getting thyroid ultrasounds, advanced brain imaging as needed, including Magnetic Resonance (MR) venograms, too. I have had a couple of patients, me personally, in the ER that have had traumatic brain injuries. I end up doing an MRV, which I know none of my partners would do, and sure enough, venous sinus thrombosis, which are causing their symptoms. I know the research on that is like 4 percent of traumatic brain injuries have that, but it could be higher. We just do not search for it enough I do not think.

Baseline screening, like Prostate-Specific Antigen (PSA), colonoscopies earlier than age 40, those—cancer screening process, in addition to the traumatic brain injury and mental health, finding this—finding not just the treatment for their symptoms, but the root cause that can change their life to reverse the symptoms of their brain injury, whether it is HBOT, as Dr. Murphy said, we need to expand on that. This cohort specifically needs to be in a medical surveillance program that encompasses their entire care from traumatic brain injury to toxic exposure because I believe, as you do, that they are connected.

Ms. KING-HINDS. I have 30 seconds and you have the rest.

Mr. JOHNSON. Sorry.

Ms. KING-HINDS. My time—it is okay.

Mr. MISCUSI. Thank you for the question. I would say if I had an ask for you today, from my evaluation, it seems like the question is what is the barrier? Is it money or is it institution? Are there institutional barriers within the VA that prevents them from making the programmatic changes that are needed to treat veterans and families with TBI? If there is an institutional barrier, well, then the BEACON Act solves that. If there is not, well then. I would ask you to evaluate what—so the question that—the thing that I would ask is how do you get—which program gets the care to the veterans fastest as they need it?

Then as far as a day in the life, I would say that I have five medical devices that have to shock some different part of my brain or my neck or something like that throughout the day so that I do not have those migraines and those episodes anymore. I would say that it is ongoing care throughout the day. Thanks.

Ms. KING-HINDS. Thank you for that.

I am out of time. I yield back.

Ms. MILLER-MEEKS. Thank you.

The chair now recognizes Representative Cherfilus-McCormick for 5 minutes for any questions she may have.

Ms. CHERFILUS-MCCORMICK. Thank you so much. Thank you so much for your testimony.

Thank you, Mr. Johnson, for your recommendation because I think that is something that has been missed is looking at the root cause and testing for cancer. Thank you for bringing that.

Thank you also, Mr. Miscusi, for your statements because I think we have the same concern. What is the problem? Is it institutional? Who can get the services to our veterans faster?

That brings me to Dr. Gore. Thank you for your testimony, also. The concern really is if we are shifting money to outside organizations, you mentioned that 100, you said—I think you said 100 people are serviced with TBI within the VA. Is that what you said in your testimony earlier?

Dr. GORE. Yes, ma'am, within the intensive—the IETP program, that is the equivalent of what our programs are doing.

Ms. CHERFILUS-MCCORMICK. The concern is if we shift that money, then less than 100 people will be treated within that program. The question that I have is, is there any evidence to suggest that shifting those dollars would show that more people will be treated, that more veterans will have access? Is there any evidence for that?

Dr. GORE. I cannot speak to the shift in funding and how that may affect your decision-making and shifts—and decision-making from a legislative standpoint, but I can comment that absolutely, evidence is required for infrastructure to be in place to deliver care and for the finances to be in place to receive care.

Ms. CHERFILUS-MCCORMICK. Specifically, my question is, is there any evidence that these organizations would provide more care and better care to our veterans than if we have kept those funds within the VA? We already said the number in the VA is 100. Do we have any tangible evidence to show that these outside organizations can do more and can do it better?

Dr. GORE. We do. We have evidence that the VA has collected that they see strong responses to treatment that is in line with evidence from multiple external organizations, including the National Intrepid Center of Excellence (NICoE) program in the Department of Defense. All of those programs have demonstrated that this treatment is effective.

A comparison between the VA and the civilian sector in this regard, I am not sure how really to answer that because what we are hoping to achieve is the research necessary to establish this as the standard of care. Once that is established as the standard of care, and that is what these resources would go toward, as well as other innovative treatments for TBI, I would suggest it is then the VA's responsibility to make a determination as to where to allocate funds so that they are taking care of veterans in the most optimal way.

These funds are not intended to just to treat veterans. These funds are intended for us to establish that this should be the

standard of care and to look at more innovative models of treatment.

Ms. CHERFILUS-MCCORMICK. Well, before we shift those funds, I think we would want to know, like, with a substantial certainty that this would actually benefit our veterans versus, you know, shifting—leaving it where they are and actually growing it there. If there is any information that you can give to us that can help us come to that certainty, that would be extremely important.

My next question is your partner—your program partners with several academic and private institutions to deliver intensive short care treatment. You mentioned that. Can you walk us through the specific training and credentialing requirements for clinicians delivering TBI care in your program and how those standards compare to the interdisciplinary teams and clinical programs' practice guidelines used in the VA?

Dr. GORE. Within our programs, the credentialing of the physicians and rehabilitation specialists is very similar to the credentialing that would occur through the VA. To your questions, which I appreciated of Dr. Scholten earlier, we actually have a robust program that is focused on veteran and military competency across all of our providers. This is the same for also the Wounded Warrior Program treatment programs.

A vast majority of the clinicians have a connection to either the VA, to military service, whether it is their selves individually because they served or whether it may be a family member or previous experience practicing in the VA. The credentialing and the training process is very similar. We share a lot of the same talent within our programs as we see within the VA.

Ms. CHERFILUS-MCCORMICK. Do you have any specific programs for making sure that they have the cultural competency for military service or our veterans? Do you have anything specific that you guys are doing to make sure each and every practitioner is exposed to it?

Dr. GORE. We do. That programming actually for our network is seeded through my own program at the Shepherd Center in Atlanta because we have been doing this for so long and so we do have a training program that is geared toward cultural competency to make sure that individuals are aware of the unique needs of veterans and servicemembers.

Ms. CHERFILUS-MCCORMICK. While I have a few seconds, my last question is, do you believe that if it was mandatory for all outside organizations to have some kind of training, do you think that would be a benefit or do you think it would be a burden?

Dr. GORE. I think when you are looking at opportunities to provide care external to the VA, and there are numerous examples of this, not just in the TBI space, but also in the behavioral health space with programs specific for post-traumatic stress, that there is a massive benefit to ensuring that individuals are competent in that area. You know, whether that should be mandatory is a question maybe that I will leave up to you. I do not think that that would be a burden. I think that is important.

Ms. CHERFILUS-MCCORMICK. Thank you.

Ms. MILLER-MEEKS. The gentlewoman's time has expired. Thank you very much.

The chair now recognizes Dr. Murphy for 5 minutes for any questions he may have.

Mr. MURPHY. Thank you, Madam Chair, and thank you all for coming today. For those of you guys that are dealing with the after effects of serving and sacrificing for my Nation, my heart goes out to my prayers with you. I pray that your journey and all this improves with each day. If you are having to have shocks with vagus nerve stimulators, I am guessing, I am assuming that is what it is, did you get that at the VA, may I ask?

Mr. MISCUSI. Yes, sir, I did.

Mr. MURPHY. Okay. Expediently done in a quick manner, good manner? Were you happy with the process?

Mr. MISCUSI. It took a while to realize that that was the resource that was needed. Then once it was prescribed, I received it in a timely manner.

Mr. MURPHY. Okay. How helpful is that to you? If you do not—I am sorry asking you personal questions.

Mr. MISCUSI. I do not mind at all. It is the difference between me having an episode every day and being able to sit here and function. Maybe it occurs once a week.

Mr. MURPHY. These are wonderful technological breakthroughs. We are on the cusp, especially with Artificial Intelligence (AI), of being able finally to, I think, crack the brain. It is the great frontier of the human body. We have a lot of work to do, but I pray that we can really crack the-on this stuff. Thank you for your service.

You know, I still, after being on this committee for years and years, do not understand the rationale of why we have to play us versus them as far—and with the veterans being bounced back between them, why it is VA versus outside institutions. Why can we just not care about the veteran first? Why is there this provinciality that we have to be so concerned about our own little world rather than what is best?

You know, Dr. Gore, I would love for you to just talk about your experience and whether you—you know, how you deal with these folks, what your protocol is, and how you deal with, you know, folks who come from the VA that may not have gotten the attention that they needed to and at what point do they show up on your door?

Dr. GORE. Thank you. I appreciate that question.

You know, I would start by saying that the Veterans Administration does a fantastic job managing a vast majority of the needs of our veterans. When these individuals come to my program, they have often cycled through a number of different treatment opportunities. There is some fracturing in the continuity of care, they are often left seeking care external to the VA. I think that that is natural.

I think if you are suffering and you are not finding the solutions that are addressing your suffering, it is normal and it is human. Honestly, you know, as a veteran myself, you know, we are individuals who want to get things done and we are going to find solutions. Folks are hungry to find opportunities and solutions to address their suffering.

When they come to us, I hear the full spectrum of stories. I hear about the positive experiences within the VA. I hear about the neg-

ative experiences. I hear about the negative and the positive experiences within the rest of the civilian healthcare system.

Mr. MURPHY. Sure.

Dr. GORE. This issue is not unique to the VA. We have a very fractured TBI treatment system within the United States. When they come to us, we have an opportunity to really wrap our arms around them. What we hear consistently is, I have never had someone sit down and spend this much time with me. I have never been surrounded by a group of specialists all at the same time, all in the same room, all around the same table who are explaining to me the different deficits and how they are affecting my day-to-day life, and coming up with a plan. This is what interdisciplinary care is really all about.

One of the things I am really proud of is similar to the national statistics, only two-thirds of the veterans who come to us are connected to the VA. After we complete treatment, in their follow up phase after treatment, 90 percent are connected to the VA. We want them to utilize those resources smartly and we want to get them reconnected. The problem is that this treatment needs to be available and it is not currently within the VA in any meaningful way.

Mr. MURPHY. Yes. You know, I think it has been the hallmark of, excuse me, medicine, at least in the last 20 years, that interdisciplinary study—interdisciplinary treatments is the way to go. We do it in oncology. We do it in other different fields. It is the best way to deal with all this.

You know, some people think just throwing money at a problem is the way to do it, and all you do is end up turning bureaucracy. You want a system that is efficient, that works, that gives you expected results, may not be able to deliver, you know, perfect outcomes every time, but if you are dealing with that type of efficient system, that understands that a blast is a blast and that you have to treat it from different angles, and also, just blasting out money is not the way you solve problems, this is the best mode of treatment that we can—or the best the best avenue of treatment that we can get for any patient, whether in their VA or not. I thank you guys for your service.

Lieutenant Colonel Johnson, it hurt me to hear that you feel that 50 percent of our folks consciously underreported. That is self—that is putting country before self. That hurts to hear. It is not unexpected because that is what our soldiers, airmen, Marines, et cetera, do, they put their country before for self. That is a lot of—it just hurts to hear that, but that is a reality.

Anyway, thank you all so much for your service. This is such a difficult, challenging problem, but thank you for working so hard.

Ms. MILLER-MEEKS. The gentleman's time has expired.

The chair now recognizes General Bergman for 5 minutes for any questions he may have.

Mr. BERGMAN. Thanks, Madam Chair. While I stepped out to take another meeting, I understand, you know, the committee process goes on, so I am going to just kind of lay out what the congressional Record was recorded as a few minutes. This is the quote, "Congresswoman Brownley to Mr. Miscusi, quote, 'Do you think that diverting $60 million from existing VA programs as the BEA-

CON Act requires helps or hinders VA in implementing intensive outpatient programs like the ones you have completed,' question mark, end quote?"

The BEACON Act does not, unless my team is mistaken, does not require the VA to divert $60 million. Instead, it allows the Department to use existing mental health funding and provides appropriators the option to allocate further funding specifically for the bill's purposes. I just want to make sure that the record stands straight that there is no diverting of $60 million here. Okay? I just wanted to inform my colleague that—of the mistake in her assumptions.

Having said that this is not personal. This is about facts. The panel's testimony makes clear that even when a TBI is labeled mild, the consequences for a veteran can be anything but. A significant number of veterans continue to live with persistent symptoms that affect daily function and community reintegration. That reality underscores why we must continue pursuing new treatments and innovative procedures to care for the veterans still living with these injuries.

With that as background, Dr. Gore, could you briefly explain the differences between a VA Polytrauma Rehabilitation Center and the other VA sites with TBI teams or polytrauma clinics?

Dr. GORE. Yes, thank you for that question. You know, I can certainly comment on my experience working with patients who have been in these—in the VA clinics, but I do not have personal experience working within the polytrauma center or one of the satellite community centers.

My experience talking with patients about this experience, their experience within the VA, the IETP programs are modeled after what we do. These are intensive programs with wraparound services, a therapy team that surround an individual for an intensive period of time. It is generally anywhere between 3 and 6 weeks of intensive treatment. That is only provided at the VA polytrauma centers.

The care that is provided in the general community is important screening care, potentially referrals to the polytrauma centers. Generally, individuals are given rehabilitation referrals that are to different locations around the community. The coordination of those referrals is very difficult. There is no communication or not a lot of communication between the providers providing that care, and that care occurs over an extended period of time. It is more the traditional model of rehabilitation that we see in this country. The fact that——

Mr. BERGMAN. I am going to—I know you could talk for a long time on this time, please. The point is, I would suggest that in any—we all use the term "stovepipes." We know what a stovepipe is. You can have two stovepipes sitting next to one another, the Veterans Administration being one, a new, you know, polytrauma center, TBI teams, whatever, in another. If you are not communicating and sharing experiences of lessons learned, neither one of you are doing your job.

As we look at the Veterans Administration to get uncomfortable, in other words, get the hell out of your stovepipe and look at what you are proposing to do and see if you have got second and third

order effects of what is working, what is not working, so that we expand on the quality of the care and the quality of the therapy and the quality of then, ultimately, outcomes when it comes to that. Because one thing, as we have talked about in all the committees I am on, especially Armed Services and Veterans' Affairs, is to break down the unnecessary stovepipes that have been allowed to grow over time and are beginning to look like weeds in a garden. When you got weeds in a garden, you do not get the beautiful flowers or the vegetables or whatever it is you are growing. Let us knock down the stovepipes.

With that, I yield back.

Ms. MILLER-MEEKS. Thank you, General Bergman.

The chair now recognizes Representative Stauber for 5 minutes for any questions he may have.

Mr. STAUBER. Thank you, Madam Chair.

I want to begin by thanking Chairman Bost and you for allowing me to wave on to today's timely hearing. I also want to thank each of our witnesses for their service to our Nation, for sharing their experiences.

As the husband of an Iraq War veteran, I personally understand the burden our country puts on our military families. Behind every servicemember is a family who supports them. It is our duty as a Nation to help during and after service.

I want to take a moment to highlight my good friend Al Johnson, who is a constituent of mine in northern Minnesota. Mr. Johnson served with honor and distinction during his time in the Army and the Minnesota National Guard. I know it is his expert testimony that the Minnesota National Guard is the best in the Nation.

Mr. Johnson, I want to take—I want to ask you a quick question before I talk and not answer my 92-year-old father's phone call there. Mr. Johnson, I want to ask you about your experiences following the attack on Al-Asad. You note in your testimony that there is ample evidence that Iran used dirty warheads during this attack, correct?

Mr. JOHNSON. Thank you for your question, Congressman Stauber. I do not have the credentials to make that official call that it was a dirty warhead. I can tell you this, people are getting sick after this attack. In addition to when we were deployed there, we did not receive dosimeters to wear. After we left, they were issued dosimeters. There was some level of concern that occurred with the amount of radioactivity that was on the base post attack.

Mr. STAUBER. Have Al-Asad veterans been able to easily access things like cancer screenings because of their presence during and after this attack?

Mr. JOHNSON. They have not. This is part of the problem where when these people separate, they spread all over the world or all over the United States. They become recluse. You lose contact with them. They are young. They do not know what to ask for because you do not know what you do not know. That is some of the gaps in not having a medical cohort surveillance program.

Mr. STAUBER. You believe that because we do not have something like a medical surveillance program for Al-Asad veterans, they are——

Mr. JOHNSON. I think they are under-triaged, correct.

Mr. STAUBER. In your testimony, you mentioned the tragic loss of SPC Jason Quitugua, who has become another victim in the veteran suicide epidemic plaguing our Nation. How many Al-Asad veterans like SPC Quitugua are slipping through the cracks because we do not have a medical surveillance program in place for the Al-Asad veterans?

Mr. JOHNSON. I do not know an exact number, but I know of a handful that nobody can get a hold of, and I do not know if they are suicidal, have addiction problems. That is concerning.

Mr. STAUBER. Would it be your testimony that these veterans are not getting the care they need at the moment?

Mr. JOHNSON. That is correct.

Mr. STAUBER. Do you believe having a medical surveillance program in place would help make sure those veterans get the support that they need?

Mr. JOHNSON. Yes, sir.

Mr. STAUBER. You also raised an interesting point about accountability regarding SPC Quitugua's death. Did SPC Quitugua have TBI before the Al-Asad attack?

Mr. JOHNSON. Nothing was indicated in his record to say——

Mr. STAUBER. Did SPC Quitugua have PTSD before the Al-Asad attack?

Mr. JOHNSON. Not that was indicated.

Mr. STAUBER. Is SPC Quitugua dead because the terrorist regime in Tehran attacked Al-Assad?

Mr. JOHNSON. In my opinion and the opinion of experts that mTBI—all agree, yes.

Mr. STAUBER. I just with the remaining time, Mr. Johnson, I want to give you the opportunity to highlight anything that you think was missed in today's hearing. The floor is yours.

Mr. JOHNSON. Well, first and foremost, I want to thank you and all of the panel for their commitment to the health and welfare of our veterans. We have made great strides in improving the lives of our warriors and families. We cannot leave the families out of this who deal with the consequences of war at home on a daily basis. There is always room for improvement.

Whether it is improving the equipment that protects us on the battlefield with the gear that we wear, passing legislation that holds terrorist countries accountable for what they do to innocent victims of, like in our case, blast injury, or funding for continued research to discover how to reduce or eliminate symptoms of TBI and PTSD, we rely on you, Congress. You are one of the conduits to solve these challenges.

The challenges of our servicemembers now that are facing in the Middle East, and this could not be more timely, this is not the last we are going to see about blast injuries and traumatic brain injuries continuing from the battlefield. It is just going to get worse. As we move into a more linear battlefield, these instances of recognizing TBI and appropriate care are going to be more prudent.

Mr. STAUBER. Thank you very much, Madam Chair. I yield back.

Ms. MILLER-MEEKS. Thank you, Representative Stauber.

I now yield myself 5 minutes to ask any questions I may have.

All three of you are military veterans, correct? Sergeant Miscusi, Lieutenant Colonel Johnson, Colonel Gore, Dr. Gore? Let me ask

you a question. The VA budget is just under, the VA healthcare budget, is just under half a trillion dollars. When we are talking about the BEACON Act, which is not diverting funds from any entity, it is $60 million for the BEACON Act. Do you know what percentage of the entire healthcare budget that is for the VA? Fifty percent, 10 percent? More like 1 percent of the entire VA healthcare budget.

I have heard—and so I am a 24-year military veteran. You all do not know me. I am a doctor. I was a nurse before. Left home at 16 to put myself through medical school. Let me ask you, all three of you are veterans. Sergeant Miscusi, when you went to Operation Mend, did you feel that they were culturally incompetent?

Mr. MISCUSI. No, I did not.

Ms. MILLER-MEEKS. Lieutenant Colonel Johnson, as a PA or a medical flight, when you have received care outside the VA, did you feel that they were culturally incompetent?

Mr. JOHNSON. No, ma'am.

Ms. MILLER-MEEKS. Dr. Gore, having been both a veteran and providing services now not at a VA facility, do you feel and do the veterans feel that you are culturally incompetent?

Dr. GORE. I feel culturally competent, ma'am.

Ms. MILLER-MEEKS. Yes. Might you as veterans know if you are receiving culturally incompetent care? You might well—damn well know if you are receiving culturally incompetent care.

What I hear from veterans every single day, and as a veteran, married to a 30-year veteran, the daughter of a veteran, six of eight children having served in our military, veterans want choice. Veterans want care. They are fully capable of determining if they think care is culturally competent or if it is competent or if they have access to that care.

It is not really a question so much as it is that we are talking about getting care to veterans in a timely fashion to which they have access and to which they can determine if it meets their needs and if it allows them to be a functional human being, father, spouse, community member once again. That is why I support the BEACON Act, because to me, what is most important as the chair of this committee is that you receive the care that you need and that we expand services where we think there is unmet and undetected need.

Mr. Johnson, and I think you have answered this, how common is routine exposure to low level blast overpressure from breaching mortars? How is this different from regular infantry and special operations forces?

Mr. JOHNSON. It is more common than we recognize, these multiple sub-concussive events that happen daily over and over again in our line of work.

Ms. MILLER-MEEKS. Thank you. Dr. Gore, do you think that we currently are meeting the need that you have perceived through the VA system as it currently exists?

Dr. GORE. I think we could do much better.

Ms. MILLER-MEEKS. I think, Sergeant Miscusi, you would probably echo that sentiment?

Mr. MISCUSI. Yes, ma'am.

Ms. MILLER-MEEKS. Yes. With that, I yield my time.

I think it is very profound, the testimony that we have heard today and the stories told by our guests. They bear witness to several things, especially with an ongoing conflict in the Middle East. They bear witness to the incredible strength and resilience of our American servicemember. Apologize for getting emotional on that, as well as the achievements of our VA healthcare system, which are incredible achievements, but also to the shortcomings of our system. It has been illuminating and an insightful hearing.

It is a moment in time when we are treating our veterans from the past two decades of warfare while catching a terrifying glimpse of what our future warfighters could face. It is imperative that Congress and the VA step up to the challenges of ensuring the health and safety of our future and our current veterans. Whether it is an institutional problem or whether it is a funding problem, both those things need to be addressed.

Representative Brownley, would you like to make any closing remarks?

Ms. BROWNLEY. Thank you, Madam Chair. You know, all I am trying to say here is I, you know, certainly recognize and support the role that community partners and nonprofits play in getting needed care to veterans with TBI. In fact, many are already participating in VA's Community Care Network and academic affiliation. What I am just arguing for is we should be putting more money into the system to improve care to keep with the research that is out there to give optimal care to our veterans and not have the VA have to make choices between funding their existing services and supporting entities outside of the VA.

General, sitting over there, I am happy to work with you on this. I have great respect for you. We have served on the committee for a long, long time. We have had bills together. I would love to sit down and talk with you more about what our concerns are, what your concerns are, and see—and I know Ms. Elfreth as well. I have spoken with her this morning and would love to see if we can come to an agreement between us.

Mr. BERGMAN. This is bipartisan.

Ms. BROWNLEY. Thank you. I yield back.

Ms. MILLER-MEEKS. Thank you, Ranking Member Brownley.

Again, just want to state that both as a physician and as a veteran, as a physician who has provided community care, I have always felt that my goal was to give excellent care, the highest quality of care, and in a culturally competent way, even if I was not trained by the VA in what some might consider culturally competent care. I appreciate our witnesses who have experienced both systems for letting us know where they think are the tremendous attributes of the VA as well as where the deficiencies are. It is through them that will prepare and extend a system that meets the needs of veterans.

I want to thank you for your participation in today's hearings and for the discussions that we have had on this very important topic. The complete written statements of today's witnesses will be extended—entered into the hearing record.

I ask unanimous consent that all members have 5 legislative days to revise and extend their remarks and include extraneous material. Hearing no objection, so ordered.

I thank the members and the witnesses for their attendance and their participation today. This hearing is now adjourned.

[Whereupon, at 12:14 p.m., the subcommittee was adjourned.]

A P P E N D I X

PREPARED STATEMENTS OF WITNESSES

Prepared Statement of Rachel McArdle

Chairwoman Miller-Meeks, Ranking Member Brownley, and Members of the Subcommittee: Thank you for the opportunity to testify on the Department of Veterans Affairs' (VA) efforts to support Veterans living with traumatic brain injury (TBI). Joining me today is Dr. Joel Scholten, Executive Director, Physical Medicine and Rehabilitation. Together, we will share how VA addresses the complex needs of Veterans with TBI through clinical care, research, and collaborations.

Understanding TBI

TBI is defined as a disruption of normal brain function caused by an external force, such as a blow to the head, rapid acceleration or deceleration, or blast exposure.[1] It can result in symptoms ranging from headaches and dizziness to memory problems, mood changes, and physical impairments. For Veterans, TBI is often associated with military service, particularly in combat environments, but it also occurs in training and civilian life.

TBI is considered a "signature injury" of recent conflicts, yet its impact extends across all eras of service. Importantly, TBI rarely occurs in isolation. Many Veterans experience co-occurring conditions such as posttraumatic stress disorder (PTSD), chronic pain, and sleep disturbances, which complicate diagnosis and treatment. Understanding this complexity is essential as we consider how to best support Veterans throughout their lives.

In addition to traumatic events that may cause a TBI, Service members may also have exposures labeled as Military Occupational Blast Exposure (MOBE). MOBE is caused by repeated exposure to jets on aircraft carriers, artillery fire, or blast during breaching operations. These exposures can cause symptoms similar to TBI and can accumulate over time leading to the development of persistent symptoms. MOBE is often overlooked, yet it may contribute to symptoms resulting in difficulties with employment, driving, and interpersonal relationships. As we recognize the scope of this issue, it will be important for VA to adapt how it structures its care systems to meet these needs.

VA's Care Systems

VA has built a comprehensive care system to address TBI across the continuum of care. This includes screening, diagnosis, individualized treatment planning, and long-term support. At the heart of VA's approach is the Polytrauma System of Care, a nationwide network designed to provide specialized rehabilitation for Veterans with complex injuries, including TBI. This system includes five Polytrauma Rehabilitation Centers that deliver inpatient and outpatient, intensive, interdisciplinary care for Veterans with severe injuries. These centers work closely with Polytrauma Network Sites and Polytrauma Support Clinics to lead over 110 TBI teams across VA. Dedicated case managers coordinate services, facilitate transitions between settings, and support families throughout recovery.

VA screens all post-9/11 Veterans for TBI. Since 2007, VA has screened more than 1.8 million Veterans and connected Veterans with TBI specialists to complete an evaluation and develop a treatment plan. In Fiscal Year 2025 alone, VA treated over 160,000 Veterans with TBI-related conditions.

Every Veteran with TBI receives a personalized care plan tailored to his or her unique needs. These plans address physical, cognitive, and emotional symptoms, and often include therapies for co-occurring conditions, such as PTSD and chronic pain. VA emphasizes integrated care that combines rehabilitation with mental health services and whole health approaches. This comprehensive model helps Vet-

[1] VA/DoD Clinical Practice Guideline for the Management and Rehabilitation of Post-Acute Mild Traumatic Brain Injury. The definition is on page 6. Available at: https://www.healthquality.va.gov/HEALTHQUALITY/guidelines/Rehab/mtbi/VADODmTBICPGFinal508.pdf

erans manage symptoms, build resilience, and maintain gains achieved during rehabilitation. While clinical care is essential, VA also recognizes that research and innovation are critical to improving outcomes and shaping the future of TBI treatment.

Research and Innovation

VA is committed to advancing knowledge and improving outcomes for Veterans with TBI through research and innovation. Our efforts focus on understanding long-term effects, developing precision diagnostics, and creating effective treatments. VA engages with leading academic institutions and the Department of War through initiatives such as the Long-Term Impact of Military-Relevant Brain Consortium, Chronic Effects of Neurotrauma Consortium, and the Translational Research Center for TBI and Stress Disorders. These programs study chronic effects of TBI, identify biomarkers, and develop interventions to improve brain health.

VA is also actively investigating the impact of repeated MOBE that occurs during military operations and training. These exposures may not cause immediate symptoms but can lead to cumulative effects over time. Research is underway to better document these exposures and understand their relationship to long-term health outcomes. In addition, VA has developed tools such as the Concussion Coach mobile application to help Veterans manage symptoms and access resources. Telehealth and virtual rehabilitation programs are expanding access to care, particularly for Veterans in rural and underserved areas. These research efforts and innovations are not isolated—they are integrated with VA's clinical programs and academic affiliations to ensure that discoveries translate into better care for Veterans.

The Brain Health Coordinating Center (BHCC) serves as VA's central resource for advancing brain health research and care. The Center integrates data from across VA medical facilities to identify risk factors, track treatment outcomes, and develop strategies that protect cognitive function in Veterans. The BHCC will also coordinate future brain and mental health clinical trials in diagnostics and therapeutics.

VA works closely with universities and TBI Model Systems, a multicenter longitudinal data base that captures rehabilitation and functional outcomes of individuals with TBI, to advance evidence-based care and train clinicians.[2] These relationships allow VA to share best practices, conduct multi-site research, and accelerate the translation of findings into clinical care. By leveraging these connections, VA ensures that Veterans benefit from the latest scientific advances and that our workforce remains at the forefront of rehabilitation medicine. As we look to the future, these alliances will be essential in addressing remaining gaps and improving care for Veterans with TBI.

Opportunities to Put Veterans First

Despite progress, challenges remain. Currently, there is no single test to definitively distinguish symptoms caused by TBI from those related to mental health conditions. Veterans with mild or repeated TBIs may experience persistent symptoms that are difficult to treat. To advance the brain and mental health of Veterans, Total Brain Diagnostics is an ongoing precision, mental health research initiative to identify, validate, and integrate brain and mental health biomarkers among Veterans with specific consideration for depression, anxiety, PTSD, bipolar disorder, other mental health conditions, and TBI. The goal of this initiative is to assist clinicians in diagnosing complex brain and mental health conditions.

Looking ahead, VA will continue to improve documentation of blast and occupational exposures during military service, expand precision brain health approaches that tailor treatment to individual needs, and strengthen telehealth and intensive outpatient rehabilitation programs. We are committed to enhancing integration of mental health and whole health concepts into TBI care and deepening relationships with academia, Veterans Service Organizations, non-profits, and the Department of War to accelerate research and innovation. Finally, we aim to develop proactive case management strategies that engage Veterans with persistent symptoms and prevent functional decline. Through these efforts, we will continue to focus on putting Veterans first and advancing comprehensive care to Veterans with TBI.

Conclusion

VA remains committed to delivering world-class care, advancing research, and supporting Veterans and families affected by TBI. Through our Polytrauma System of Care, research collaborations, and innovative programs, we strive to improve out-

[2] The Traumatic Brain Injury Model Systems (TBIMS) National Data base is a prospective, multicenter data base and the largest longitudinal traumatic brain injury (TBI) data base in the world, funded by National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR).

comes and quality of life for those who have sustained these injuries. Thank you for your leadership and continued support. We look forward to your questions.

Prepared Statement of Al Johnson

Statement of
Lieutenant Colonel (Retired) Alan Johnson, PA-C
before the
Committee on Veterans' Affairs
Subcommittee on Health
U.S. House of Representatives
on
March 5, 2026

Chairwoman Miller-Meeks, Ranking Member Brownley, and distinguished Members of the Subcommittee, thank you for the opportunity to testify today.

My name is Alan Johnson and I am a retired Army Lieutenant Colonel and Aeromedical Physician Assistant who proudly served my country for more than 27 years. I am testifying today not on behalf of the Department of War but in my personal capacity. To that end, I offer my experience as a military medical provider, a researcher, a survivor of a ballistic missile attack by Iran, and then as a patient.

On January 8, 2020, while deployed to Al-Asad Airbase with the 34th Expeditionary Combat Aviation Brigade, I was attached to Delta Company, 2nd Battalion, 82nd Aviation Regiment, 82nd Combat Aviation Brigade, 82nd Airborne Division. On that day, the terrorist nation Iran carried out the largest ballistic missile attack on US forces in history. They fired 15 ballistic missiles at our base. These missiles were acquired through nefarious financing networks and carried warheads weighing roughly 1,500 pounds.

During the attack, I was sheltered in an indirect fire shelter. These shelters are designed to protect against rockets, small arms, grenades, or mortar fire; not the ballistic missiles that reigned down on us. I have no memory of the first three missile impacts because the third missile impact knocked me unconscious. I woke up just in time to experience missiles four, five, and six. All of

these missiles were in close proximity to my position, with number six impacting 60 feet away from me. The subsequent massive percussive wave knocked me unconscious for a second time.

Above-ground indirect-fire shelter at Al-Asad Air Base damaged in the January 8, 2020 missile attack. Which lacked a protective door and offered limited protection from nearby blast impacts.

These missiles struck occupied critical operational areas without interception, resulting in catastrophic damage to mission-essential infrastructure, living quarters, and support systems. Environmental testing after the attack, detected radioactive isotopes, heavy metals, and toxic chemicals at the site. The propellant in these missiles also contained another toxin, ammonium perchlorate, a powerful oxidizer and irritant linked to adverse health effects.

Damage to barracks and operations facilities at Al-Asad Air Base following the January 8, 2020 Iranian missile attack. Arrow indicates the indirect-fire shelter where Lt. Col. Johnson was located, approximately 60 feet from the impact site.

Analyte	CAS	Result_Value	Reporting_Limit	Units	Class	Method
Actinium-228	14331-83-0	0.37	0.3	pCi/g	Radiation	ASTM C1402-98
Barium	7440-39-3	130.0	4.8	mg/kg	Metals	EPA 6010B
Benz[a]anthracene	56-55-3	0.55	0.34	mg/kg	PAH	EPA 8270C
Benzo[a]pyrene	50-32-8	0.36	0.34	mg/kg	PAH	EPA 8270C
Benzo[b]fluoranthene	205-99-2	0.56	0.34	mg/kg	PAH	EPA 8270C
Bismuth-214	14733-03-0	0.49	0.093	pCi/g	ASTM	C1402-98
Cesium-137	10045-97-3	0.08	0.062	pCi/g	Radiation	ASTM C1402-98
Chromium	7440-47-3	41.0	9.6	mg/kg	Metals	EPA 6010B
Chrysene	218-01-9	0.55	0.34	mg/kg	PAH	EPA 8270C
Di(2-ethylhexyl)phthalate	117-81-7	4.2	0.34	mg/kg	SVOC	EPA 8270C
Fluoranthene	206-44-0	2.8	0.34	mg/kg	PAH	EPA 8270C
Mercury	7439-97-6	0.013	0.012	mg/kg	Metals	EPA 7471B
Nickel	7440-02-0	50.0	9.6	mg/kg	Metals	EPA 6010B
Percent Moisture		3.1	0.1	%	Characteristic	DLS 611
Percent solids		97.0	0.1	%		DLS 611
Phenanthrene	85-01-8	0.94	0.34	mg/kg	PAH	EPA 8270C
Phenol	108-95-2	0.4	0.34	mg/kg	SVOC	EPA 8270C
Pyrene	129-00-0	1.8	0.34	mg/kg	SVOC	EPA 8270C
Silver	7440-22-4	2.3	1.9	mg/kg	Metals	EPA 6010B
Strontium	7440-24-6	410.0	1.9	mg/kg	Metals	EPA 6010B

Soil sample from Al-Asad missile impact site showing detectable radioactive isotopes and heavy metals in crater soil.

Because of the attack, I have been diagnosed with TBI, PTSD, cranial nerve damage that causes double vision, broken teeth, chronic insomnia, ringing in my ears, neck pain, balance problems, and difficulty in word finding. I feel more emotionally distant from my wife, children, and friends. I worry about whether I will ever again be the husband, father, and friend that I was before that attack, as I have experienced hypervigilance, paranoia, and depression. I am also currently in a thyroid surveillance program due to a number of new thyroid nodules that have developed since the attack and exposure to the toxic environment.

After the attack, I immediately began treating the service members around me. Many Soldiers I treated, now live with injuries similar or more severe than mine. Specialist Jason Quitugua was diagnosed with a TBI that caused him headaches, insomnia, PTSD, and severe depression. He succumbed to his injuries and died of suicide on October 7, 2021. The injuries he suffered when Iran intentionally targeted our base ultimately cost him his life.

As this Committee may be aware, Congress has provided victims of Iranian terrorism, including service members, with certain remedies in Federal Court. Unfortunately, unlike other victims who succumbed to their wounds in Iranian attacks, Jason's family has been denied justice because his injury was a TBI, rather a more visible injury that is easier for a federal judge to understand. Jason's family has done its best to educate the court, but a statement from any member of this committee on the devastation that TBI-caused suicide has wrought on service members would go a long way towards achieving justice for Jason and similarly situated victims of TBI.

Another case I will never forget is Chief Warrant Officer Two Thomas Caudill. I recall digging through the rubble of my clinic to search for medication to help his symptoms. After

screening him with the MACE 2, I diagnosed a traumatic brain injury and arranged for his medical evacuation to a higher level of care in the theater. He was returned to theatre after begging doctors to finish his deployment. The imaging before his return to the battlefield was clear, yet his injuries were underestimated because traumatic brain injuries often do not appear on typical imaging, even when the damage is real.

Let me be clear: many Soldiers in our unit passed the MACE 2 screening tool due to conscientiously under-reporting their symptoms, as they wished to remain in their mission essential roles. They were subsequently not correctly evaluated immediately after the attack. Many personnel resumed their work duties and immediately began aiding in cleanup, including digging through rubble that we later learned was contaminated. Many of these Soldiers have experienced ongoing mental health and medical issues, including similar thyroid issues I have discovered.

I co-authored two peer-reviewed studies regarding Traumatic Brain Injuries due to blast injury at Al-Asad. In the first study we identified over 20% additional patients that were diagnosed with mild traumatic brain injury four weeks after the attack. In that study, 34 of 35 patients met criteria for mild traumatic brain injury that were within 100 meters of an impact. [1] In our second study of 583 exposed personnel, more than 80 percent experienced blast exposure, and nearly half remained symptomatic four to six weeks later, with sleep problems, anxiety, and headaches. [2] However, many of the Soldiers I evaluated after the missile attack passed the MACE 2 exam because it cannot detect delayed symptoms, subtle cognitive changes, or injuries from repeated blast exposure.

Specialist Patrick Ben, who assisted in the clean up, later experienced episodes of thyrotoxicosis periodic paralysis in which he would lose sensation of his extremities before being rushed to the emergency room with temporary paralysis. He was diagnosed with hyperthyroidism, Graves Disease, and Thyrotoxicosis Paralysis, and underwent a thyroidectomy. I have become aware of at least half a dozen other service members from the attack with thyroid problems. However, I lost contact after being medically retired, and cannot verify each case. That is the problem - without long-term monitoring or a structured surveillance program, injured Soldiers can disappear from care.

Specialist Patrick Ben, Staff Sergeant Costin Herwig and Specialist Gregory Sorensen standing in a blast crater at Al-Asad Air Base following the January 8, 2020 missile attack.

Since the attack, improvements have been made, but prevention must be the first line of defense. These injuries were the catalyst for necessary bunker improvements and Air Defense Artillery support. However, modern warfare involves repeated blast exposures and complex environmental hazards. Our prevention, monitoring, and treatment of Veterans must keep pace

with these realities. The identification and treatment of TBIs still require significant improvement, including better immediate screening, mandatory follow-up evaluations, and long-term monitoring of exposed service members. My recommendations are as follows:

1. **Improved field TBI screening tools** as current tools like MACE-2 can be difficult to administer and miss mild or delayed brain injuries in austere combat environments.
2. **Brain MRI and MRV imaging after blast exposure** as hidden injuries such as bleeding, torn brain tissue, tumors, or blood clots often do not show up on routine exams.
3. **Baseline and follow-up neuropsychological testing** as cognitive problems from blast exposure may appear months later and cannot be detected by imaging alone.
4. **The increased use of other cancer screening methods** as toxic exposure increases cancer risk and such cancers may not present for years following exposure.
    a. Scheduling a baseline screening colonoscopy before the recommended typical age.
    b. A baseline and periodic CT urogram (to evaluate cancers such as urinary and reproductive systems).
    c. A baseline and periodic CT of the chest/abdomen/pelvis (to evaluate cancers such as lung and pancreatic cancer).
    d. Thyroid ultrasound screening and annual follow up (as thyroid nodules and tumors develop after toxic exposure, and early detection improves outcomes).
5. **Annual increased baseline laboratory testing (CBC, CMP, PSA, thyroid panels, Lipase)** as baseline labs allow doctors to detect subtle changes over time and identify disease earlier.
6. **Investment in research into therapies that aim to restore brain function,** not just manage symptoms as many veterans are seeking alternative or experimental treatments because traditional care has not resolved their injuries.

In closing, modern war is evolving with successive blasts and chemical exposures. The prevention, monitoring and treatment of Veterans must fall in line with the dynamically changing battlefield. The VA recognizes that service in Iraq exposed troops to toxic environmental

hazards. Systematic tracking and long-term study of medical conditions related to those exposures may not be keeping pace with the urgency of suicide prevention efforts.

VA research on traumatic brain injury is valuable and advancing care. However, it begins after a diagnosis is made. The problem is that not every injured service member is diagnosed, whether due to underreporting, delayed symptoms, or limitations in early screening. At Al-Asad, we saw missed early detection, limited imaging after blast exposure, and no structured long-term monitoring of environmental exposures. If the diagnosis is missed, the research and care never begin.

The Department of Veteran's Affairs recently found those who have experienced head trauma, have an increased suicidal ideation, suicide attempt, and death by suicide rate in comparison to other Veterans. From 2001 through 2023, suicide rates were consistently higher among veterans diagnosed with TBI. In 2023, the suicide rate for veterans with a recent TBI diagnosis was more than 94 percent higher than for veterans without a TBI diagnosis. [3]

While the VA also recognizes that service in Iraq exposed troops to toxic environmental hazards, we do not study it in the same way we do suicides or the prevention of them, for example. While the VA has important research programs that are working toward restoring function after TBI, these efforts mostly help veterans cope with symptoms. They do not detect it early, or track long-term exposure. By the time a veteran enters these programs, the damage is often already done. We badly need to expand the systematic monitoring and reporting of research into therapies intended to restore brain function. This, we hope, will prevent Soldiers like SPC Jason Quitugua from becoming statistics.

Early identification is not only a medical issue. It is a compensation and treatment issue. Service members injured in terrorist attacks like the Al-Asad missile strike often depend on documented blast exposure and medical diagnosis to access VA care and compensation. Due to recent legal rulings, many injured veterans are now unable to recover compensation from other sources they once could, even when their injuries are well documented. If we fail to diagnose and track blast injuries early, these veterans lose both care and the financial support Congress intended for them.

The legal avenue that Congress created for these victims has effectively been closed off by the courts. In *Hansen v. Islamic Republic of Iran*, 185 service members and their families, many of them from Al-Asad, sued Iran for the January 8, 2020 missile attack. The U.S. District Court for the District of Columbia dismissed the case. The court ruled that because the attack did not result in fatalities among the plaintiffs, it did not constitute an "extrajudicial killing" under the Foreign Sovereign Immunities Act (FSIA) terrorism exception. In other words, the very fact that these service members survived an attack Iran intended to be lethal was used against them. They were denied the right to even seek justice because they lived.

This judicial interpretation contradicts what Congress intended when it enacted the FSIA terrorism exception. The exception was designed to give victims of state-sponsored terrorism a path to accountability, not to limit that path only to those killed. The D.C. Circuit's narrow reading, now being considered for certiorari by the Supreme Court in *Borochov v. Islamic Republic of Iran*, restricts claims to only those involving fatalities, leaving the vast majority of injured victims with no legal recourse whatsoever. This Committee should know: if Congress does not act, there is no guarantee the Supreme Court will correct course. The legislative fix is ours to make.

Moreover, the Al-Asad attack did result in a fatality. Jason Quitugua succumbed to his TBI when he committed suicide. The court's refusal to treat TBI in the same manner as a fatal injury to any other vital organ represents a gap in education and perception that this Committee is well suited to address. This institution's familiarity with the scourge of TBI and its deep credibility as a champion for veterans would go a long way towards convincing federal courts to take TBI as seriously as any other potentially fatal injury.

This gap in justice, when combined with the uneven coverage we have discussed today within the VA monitoring and care system, creates a dangerous and unjust situation. A service member wounded in a terrorist attack may not receive timely diagnosis through proper screening, may not be enrolled in a structured long-term monitoring program, and now may be told by a court that they have no legal remedy against the state sponsor that targeted them. Each of these failures compounds the others. Without early identification and documentation of injuries, a veteran loses both access to VA care and any evidentiary foundation for a legal claim. Without a legal claim, Iran, which has wounded thousands of American troops over the past two decades, faces no accountability and no consequence. These service members are falling through every crack at once.

Hundreds of service members were exposed in the Al-Asad attack. Many are still suffering today. Congress can help by requiring better screening, follow-up care, and long-term tracking of blast-exposed troops so that no injured service member disappears from care, simply because their injuries were missed in the chaos or fog of war.

Finally, considering what our service members abroad are facing with new Iranian missile attacks this week, your work with this committee on these issues have become even more

critical. Thank you for your time and your commitment to our service members, active and retired.

1. U.S. Department of Veterans Affairs, *2025 National Veteran Suicide Prevention Annual Report, Part 1: Overview* (2025).
2. Annika Lenz et al., *Shockwaves of War: Neurobehavioral Symptom Analysis Post-Al Asad Missile Strike*, Military Medicine (2025).
3. Hainsworth JB et al., *The 8 January 2020 theatre ballistic missile attack…*, BMJ Neurology Open (2023).

Prepared Statement of Buster Miscusi

Chairwoman Miller-Meeks, Ranking Member Brownley and Distinguished Members of the Committee, thank you for the opportunity to represent my fellow veterans who bear the invisible burden of traumatic brain injuries. I hope that my testimony today honors their service and experiences. While each of our journeys of injury and recovery are unique, rarely follow a straight path, and are unlikely to be repeated, they do tend to rhyme.

In 2001 I was in fourth grade on the Lower East Side of Manhattan on 9/11 when the United States was attacked. I remember being a 9-year-old kid reading the comics and sports pages on 9/10, and then sitting on those same playgrounds on 9/12 discussing international politics and the ethics of a military strike with my friends. It was then that my goal to serve in the U.S. military first materialized—a goal I would realize 9 years later when I enlisted in the Marine Corps infantry. I dreamt of a long career fighting in combat against the enemies of the United States, getting justice for the 2,977 victims of 9/11 and the countless other Americans whose lives were irreversibly changed that day.

Before my first deployment, that dream looked achievable. I was good at my job, getting meritoriously promoted twice within my first year. I could glance at a map, go on a 5-hour patrol, and know exactly where I was. I could expertly navigate the social world I lived in, understanding non-verbal communication, sarcasm, irony, and implied meaning to foster strong relationships with my unit, my newly wedded wife, and my family. I could tolerate change and new experiences, finding my way through chaotic environments. My future military career—and my life—looked bright.

When I came home from Afghanistan in 2012 I was diagnosed with PTSD. After a 3-week sequence of cognitive behavioral therapy I was well enough to get back in the fight.

Unfortunately, in 2015 I was diagnosed with Crohn's Disease and sent to Wounded Warrior Battalion East in Camp Lejuene, North Carolina to be medically retired. My dream of a long career in the Marine Corps had been shattered. Overnight I was no longer the mortar man, infantry squad leader, or martial arts instructor I had been for the past 5 years. Now I was a patient.

During the battery of appointments and evaluations for my medical board the providers diagnosed me with TBI on top of the Crohn's Disease and PTSD. From the outside looking in it looked like the wheels had come flying off the moment I slowed down. In reality, it was that by slowing down I realized that the wheels had fallen off a long time ago. What I was struggling with wasn't new, it had just built up so slowly over time that I had adapted little by little and barely noticed how far I had fallen.

During my time in the infantry I had fired thousands of rounds of mortars and detonated numerous explosives, but I never thought I had a TBI because I hadn't been exposed to an IED blast and I couldn't recall ever being knocked unconscious. Back then, the cumulative effects of repeated low blast exposures were not widely recognized, screened for, or understood within the military or clinical settings.

Additionally, because the majority of us in the infantry suffered from some type of headache, confusion, and anger problems we assumed it was normal. The effects of these repeated overpressure blasts were shared by all and treated with humor. Whether it was bloody noses, blood coming from our ears, or losing my hearing for 2 weeks—even while wearing ear protection—nothing was immune from an infantry marine's sense of humor. Somewhere there is a photo of me, flanked by a marine on either side, with two lit cigarettes dangling out of my ears in a poor man's attempt at ear candling after I had lost my hearing for 2 weeks. Back then, nothing couldn't be solved with a laugh, and a headache was no match for a sufficient amount of nicotine, caffeine, a change of socks, a drink of water, and some Advil. My headaches and vertigo were chalked up to dehydration, confusion was assumed to be caused by a character flaw, and inappropriate jokes, whether violent or sexual, were accepted as part of the military culture.

Now at Wounded Warrior Battalion, these experiences were seen as symptoms. I initially pushed back against the TBI diagnosis, confused since I had never been exposed to an IED. My providers explained that PTSD and TBI can share overlapping symptoms and that there were some ways that I was thinking and processing information that were uniquely related to TBI. The doctors explained that being exposed to repeated shock waves from firing weapons and detonating explosions in training could cause a TBI just as well as any explosion in combat.

What I had considered a "painful headache that made things look funny" was diagnosed as a complex migraine disorder with aura. The doctors rightly noticed that the confusion wasn't a character flaw, but by challenges with memory recall and in-

formation processing. Inappropriate jokes were recognized not as an infantry cultural norm that I couldn't let go of, but as a problem with my capacity to filter my thoughts and notice social and non-verbal cues. I was diagnosed with a traumatic brain injury caused by cumulative low-blast injuries. The doctors prescribed medications to help with my migraines, sent me to speech therapy for the memory challenges, and mental health for the problem with my filter. With a diagnosis and a treatment plan I was medically retired from the Marine Corps in 2018 and began going to college with dreams of becoming an astronomer.

Unfortunately, recovery is not linear and even if we stick to our treatment plan to the letter things can fall apart. A year after being medically retired from the Marine Corps I began having episodes where I would lose function in one side of my body, my face would sag and twitch, and my speech would slur and stutter. During an episode I couldn't walk, talk, or eat. My sense of touch deadened and I could no longer notice the difference between soft and sharp objects, or how hard I was holding something. The doctors at the VA ruled out a stroke saying that it felt like "the engine still has power, the transmission just keeps slipping out of gear".

While humorous in an infantry sort of way, these episodes were occurring nearly daily and would require a full day of rest to recover. It was no longer safe for me to drive and I had to leave school, unable to maintain the course of study. With my ability to function reduced such a significant extent, all of the symptoms that were previously managed became worse. The VA doctors did the best they could to manage these symptoms with the skills they had. They prescribed medications and medical devices, I tried acupuncture, massage, and hypnosis, but nothing seemed to help me return to a normal level of function. I began to fall into a depression, believing that I was a burden and that the meaning I had built my life around—service, responsibility, and usefulness—was lost.

Even in the midst of my despair, my wife held on to hope. Her hope inspired me to keep trying, to keep searching for anything that could help. I was at the end of my rope when I spoke to a nurse case manager from Semper Fi & America's Fund, who asked if I had ever heard of UCLA Operation Mend—an intensive outpatient program that partners with Wounded Warrior Project to help veterans with PTSD and TBI. I told her I hadn't, but that I would be willing to try anything once.

Operation Mend treated my brain injury differently. They didn't treat my injury as a problem to solve by trying to make it go away. During their intake they collected an entire picture of everything that was happening. Every single symptom that I was experiencing, even if it might have been associated with Crohn's Disease and not TBI, was considered. They took that information and, rather than trying to reduce my symptoms alone, they worked with me to identify the strengths I already had and the skills and resources needed to work around my limitations. They worked WITH me, not ON me.

More importantly, they included my wife in the process, working with her as well—recognizing that this injury does not affect one person alone, but impacts the entire family. It turns out that recovery, just like military operations, is a team sport. Operation Mend helped restore my belief that, while my brain injury was debilitating, painful, and difficult to understand, I could find a way to live a meaningful life of service if I learned to lean on my strengths and develop the skills and resources needed to support me and my family. Returning home with this new approach from Operation Mend I was able to get connected with a headache specialist who helped me understand that challenges I had been facing that I thought were part of Crohn's Disease, feeling like I was getting bitten by red ants, getting extremely weepy for no reason (don't play bag pipes around me unless you want to see me cry), and randomly getting voraciously hungry were all part of my migraine disorder too.

Operation Mend didn't make the migraines, the symptoms, or the TBI go away. I wasn't restored to my old level of functioning. But it did restore my sense of agency. Today, I still get migraines. I have a constant low-grade headache, my ears ring, and my head spins. I still break glass ware and I still get lost and need a GPS to get around. I struggle to understand sarcasm, irony, or implied meaning conveyed through non-verbal communication. I still cry when I hear bag pipes. Chaotic, cluttered, and crowded environments continue to confuse, disorient, and frustrate me. But now—thanks to Operation Mend, the VA, and my wife—these are challenges I have the skills and resources to face. I will likely face them for as long as I am alive, but they are no longer a sign of my failure. They are a sign of my survival. A survival that, while painful, is marked by humor, brotherhood, and purpose. While my future no longer looks the way it did when I first joined the Marine Corps, it is still full of hope.

By leveraging the skills and resources I have been given through Wounded Warrior Battalion, Operation Mend, Semper Fi & America's Fund, Wounded Warrior

Project, and the VA, I now have the opportunity to discover new strengths and abilities within myself so that I can serve my family and my community with more compassion, patience, and wisdom than I was capable of before.

My story is not unique. The infantry is not the only military occupation exposed to environments with a risk of overpressure injuries. My struggle to describe my experience in a way that allowed me to access the right care is shared by many, especially those with brain injuries. Veterans, transitioning service members, and their families need to know that low blast exposure injuries can occur regardless of occupation, deployment history, or combat experience. Training must be developed so veterans, transitioning service members, and their families are given the language needed to explain their experiences and access appropriate care.

Programs like Operation Mend—where symptoms are treated as challenges to work with and through rather than obstacles to destroy or be destroyed by; where veterans are listened to for things they don't yet have words for; and where caregivers are honored as integral partners in the healing journey rather than a dispensable afterthought—should be the gold standard of care and emulated nationwide throughout the VA.

The capacity to provide this level of warrior-family–focused care already exists within the VA. The programs simply need to be organized, and veterans and caregivers need to be honored as key stakeholders in the design and implementation process. Developing these programs requires the collaboration of those who know what the problem is, those who know how to solve it, and those who have the platform to make it a reality. I know what this injury feels like, and I know what helped me. The VA knows how to solve it and has the platform to make it a reality. Now that this Committee understands it as well, the responsibility to act no longer rests with veterans alone.

Prepared Statement of Russell Gore

AVALON
ACTION ALLIANCE

Statement for the Record

Russell K. Gore, MD, FAAN
Chief Medical Officer
Avalon Action Alliance
Medical Director
SHARE Military Initiative

Before the House Veterans Affairs Committee, Subcommittee on Health

March 5, 2026

Chairwoman Miller-Meeks, Ranking Member Brownley, and Members of the Committee:

Thank you for the opportunity to submit this written statement for the record on traumatic brain injury (TBI) and the ongoing brain health needs of America's veterans. I am Russell ("Rusty") Gore, M.D., a neurologist board-certified in Neurology and Brain Injury Medicine and a former U.S. Air Force operational Flight Surgeon. I currently serve in clinical leadership roles focused on mild-to-moderate TBI, complex concussion, and the overlapping neurologic, vestibular, sleep, pain, and mental health conditions that frequently accompany brain injury.

This statement addresses: (1) the clinical reality of persistent TBI; (2) why access and integration gaps remain despite VA progress; (3) why Avalon Action Alliance's complementary partnership model helps; (4) the TBI–suicide risk relationship using VA's most recent annual suicide surveillance (updated with 2023 data); and (5) why passage of the BEACON Act is necessary.

I. TBI in Veteran Populations: Burden and Complexity

TBI is a defining injury of modern military service. Since 2000, more than 500,000 service members have sustained a TBI. While many TBIs are classified as "mild," a significant subset of veterans experiences persistent symptoms that affect life function and community reintegration.

Clinically, persistent TBI is often multi-domain: symptoms may include headaches, sleep disruption, dizziness and imbalance, cognitive inefficiency, irritability, and mood disturbance.

These problems commonly overlap with PTSD, chronic pain, and substance use risk—conditions that can intensify disability and complicate recovery.[1]

Post-traumatic headache provides a clear example. It is widely recognized as a common sequela of mild TBI, can persist for months to years, and often co-occurs with sleep disturbance and mental health symptoms, requiring multimodal assessment and management rather than isolated treatment.[2]

Peer-reviewed clinical descriptions of intensive interdisciplinary programs reinforce why integrated care is often necessary. A published case report describing an intensive outpatient interdisciplinary program for a veteran with chronic TBI and associated comorbidities documents a broad symptom profile (including headaches, insomnia, cognitive difficulties, depression/anxiety, PTSD symptoms, anger, balance impairment, and chronic pain) and reports meaningful improvement following coordinated interdisciplinary treatment with planned follow-up supports.[3] The literature supports intensive, interdisciplinary care for veterans and service members with mTBI and associated co-occurring disorders. This intervention is individualized to the needs of the patient and prospective studies demonstrate a meaningful and durable response to treatment including prospective studies from the Department of Defense and Avalon Alliance partner, the SHARE Military Initiative at the Shepherd Center.[4]

II. VA Progress and Why Gaps Persist

VA has made meaningful progress in building brain injury and rehabilitation capacity, including improved screening, the polytrauma system of care and improved access to specialty services. Yet, persistent gaps remain that should be understood as structural challenges rather than lack of effort. Veterans who are rural, far from specialty centers, living with complex comorbidity, or disengaged after difficult care experiences may not access sufficiently integrated, high-touch treatment with the continuity required for durable gains.

National expert discussions on TBI systems describe similar needs: continuity across the care continuum, reduced fragmentation, and learning-health-system approaches that integrate data

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[1] Rebekka Dieterich-Hartwell et al., "An Integrative, Holistic Treatment Approach for Veterans with Chronic Traumatic Brain Injury and Associated Comorbidities: Case Report," Frontiers in Psychiatry 16 (2025): 1568876.
[2] Yevgeniya Sergeyenko, "A Comprehensive Approach to the Assessment and Management of Posttraumatic Headache," *Physical Medicine and Rehabilitation Clinics of North America* (2025).
[3] Dieterich-Hartwell et al., "Integrative, Holistic Treatment Approach."
[4] DeGraba TJ, Williams K, Koffman R, et al. Efficacy of an Interdisciplinary Intensive Outpatient Program in Treating Combat-Related Traumatic Brain Injury and Psychological Health Conditions. Front Neurol. 2021;11:580182; Wallace TD, McCauley KL, Hodge AT, et al. Use of person-centered goals to direct interdisciplinary care for military service members and Veterans with chronic mTBI and co-occurring psychological conditions. Frontiers in neurology 2022;13:1015591.

and outcomes to improve long-term recovery and reintegration.[5] These themes align with what veterans and families often face: multi-domain symptoms, multiple referrals, and too little coordinated follow-through.

III. Why Avalon Action Alliance's Model Works

Avalon Action Alliance supports a "fill-the-void" approach that is best understood as capacity augmentation, *not privatization*. The intent is to complement VA by partnering with high-performing programs capable of delivering comprehensive assessment, interdisciplinary treatment, and structured follow-up for veterans who are not effectively reached (or not successfully retained) within traditional pathways.

From a clinical systems perspective, the model's strength lies in (1) front-end comprehensive assessment and individualized planning; (2) interdisciplinary delivery designed for overlapping neurologic, vestibular, sleep, pain, and mental health needs; and (3) continuity supports that reduce "handoff loss" after intensive care.[6]

Programs designed for complex veteran needs demonstrate these principles. Shepherd Center's SHARE Military Initiative, for example, describes comprehensive rehabilitation services for service members and veterans with brain injury and PTSD, reflecting an interdisciplinary orientation and structured support for complex cases.

IV. TBI and Suicide Risk: VA's Most Recent Data (Updated with 2023 Outcomes)

Any serious TBI strategy must include suicide prevention. VA's most recent annual suicide surveillance report (updated with 2023 data) identifies traumatic brain injury as a clinically important subgroup. In 2023, VA reports the suicide rate among Veteran VHA users with a recent TBI diagnosis was 94.3% higher than those without a recent TBI diagnosis.[7] The suicide rate for veterans is 3.9 per 100,000 and veterans w/ TBI the suicide rate is 77.6 per 100,000.[8]

These findings do not mean TBI alone causes suicide, but they do indicate that veterans with TBI diagnoses represent a materially higher-risk population. This supports an urgent clinical and policy conclusion that brain injury care and suicide prevention should be integrated

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[5] National Academies of Sciences, Engineering, and Medicine, *Data Integration in Learning Health Care Systems for Traumatic Brain Injury: Proceedings of a Workshop* (Washington, DC: National Academies Press, 2024).
[6] Dieterich-Hartwell et al., "Integrative, Holistic Treatment Approach."
[7] U.S. Department of Veterans Affairs, *2025 National Veteran Suicide Prevention Annual Report: Part 2 of 2—Report Findings* (Washington, DC: Department of Veterans Affairs, 2025).
[8] Howard, Jeffrey T., Ian J. Stewart, Megan E. Amuan, Jud C. Janak, Krista J. Howard, and Mary Jo Pugh. "Trends in suicide rates among post-9/11 US military veterans with and without traumatic brain injury from 2006-2020." JAMA neurology 80, no. 10 (2023): 1117-1119.

operationally, particularly when TBI overlaps with sleep disruption, PTSD, chronic pain, and substance use risk.[9]

V. The BEACON Act: Why It Is Necessary

The BEACON Act aligns with the clinical and systems realities described above by creating VA grant mechanisms to support development, implementation, and evaluation of neurorehabilitation approaches for chronic mild TBI, including Randomized Controlled Trials (RCTs) for definitive proof including evidence-based integrative and nontraditional therapies, with outcomes measurement.[10] As drafted, it is intended to supplement, not supplant VA's existing clinical care and research.

This policy design is appropriate because persistent TBI is heterogeneous and interdisciplinary models, while clinically coherent, are difficult to scale without structured evaluation and dissemination.[11] VA's own data also show that veterans with recent TBI diagnoses in VHA care have markedly elevated suicide rates, underscoring urgency and the need for integrated models that address brain injury and mental health risks together.[12] By accelerating scalable, evidence-based neurorehabilitation that improves function and mental health for veterans with chronic mTBI, the BEACON Act can help reduce suicide risk and long-term disability burden—strengthening families, workforce participation, and the broader evidence base for brain-injury care.

Conclusion

TBI among veterans is often a persistent, multi-domain condition shaped by comorbidity and care fragmentation. VA has made meaningful progress, yet gaps remain in integrated access and continuity for veterans with complex needs. An innovative approach is critical to establish the evidence necessary to validate this model of care and improve access to this care for all veterans with TBI. The Avalon Action Alliance's partnership model helps close those gaps by supporting coordinated interdisciplinary programs and follow-up. VA's most recent suicide surveillance, updated with 2023 data, underscores the urgency: suicide rates are substantially higher among recent VHA users with recent TBI diagnoses. The BEACON Act provides a timely mechanism to evaluate and scale effective neurorehabilitation approaches while complementing VA's mission.

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[9] U.S. Department of Veterans Affairs, *2025 National Veteran Suicide Prevention Annual Report: Part 2 of 2—Report Findings.*
[10] H.R. 6993, 119th Cong., 1st sess.
[11] National Academies of Sciences, Engineering, and Medicine, *Data Integration in Learning Health Care Systems for Traumatic Brain Injury*; Dieterich-Hartwell et al., "Integrative, Holistic Treatment Approach."
[12] U.S. Department of Veterans Affairs, 2025 National Veteran Suicide Prevention Annual Report: Part 2 of 2—Report Findings.

Thank you for the opportunity to submit this statement for the record.

Russell K. Gore, MD, FAAN
Chief Medical Officer
Avalon Action Alliance
Medical Director
SHARE Military Initiative

Russell Gore is the Founding Director of the Shepherd Center Complex Concussion Clinic and Medical Director of the SHARE Military Initiative. He also currently serves as Chief Medical Officer for the Avalon Action Alliance, a national network of programs treating complex mTBI in service members and veterans. Clinically Dr. Gore is a neurologist specialized in traumatic brain injury and the vestibular, oculomotor, and balance systems with specific interest in the assessment and rehabilitation of athletes, service members, and veterans with protracted recovery after mild TBI.

Before starting his career in neurology, Dr. Gore served as a military flight surgeon in the US Air Force including experience at the Air Force Research Laboratory. He was privileged to care for soldiers at home and overseas and experienced first-hand the devastating aftermath of traumatic combat injuries.

Dr. Gore is an adjunct Associate Professor in the Georgia Institute of Technology and Emory University Wallace H. Coulter Department of Biomedical Engineering, and he directs Shepherd Center's mTBI Brain Health and Recovery Laboratory. He leads an interdisciplinary research team developing methods to assess, quantify, and treat brain injury for military and sports applications. His research has been supported by numerous foundations, the National Institutes of Health, and the Department of Defense.

Dr. Gore serves on the Veterans Administration Federal Advisor Committee for Prosthetics and Special Disabilities. He also serves as concussion consultant and advisor for US Major League Rugby, the 2026 FIFA World Cup, and other college and professional sports teams.

About Avalon Action Alliance

Avalon Action Alliance is a 501(c)(3) nonprofit dedicated to helping veterans and first responders heal from the invisible wounds of service, including traumatic brain injury (TBI), post-traumatic stress (PTS), and substance abuse (SA) challenges. Avalon exists to simplify access to care by serving as a single point of contact and connecting warriors to specialized treatment through a national network of trusted providers.

At Avalon, veterans and first responders are never handed off or left to navigate care alone. Instead, we walk beside them, making direct connections, coordinating referrals, and partnering across our alliance of care providers to ensure warriors receive the support they deserve.

To date, Avalon-supported partners have served more than 1,400 warriors through intensive outpatient TBI centers, more than 5,500 participants through post-traumatic growth training, and funded over 275 warriors for substance abuse treatment. These outcomes reflect Avalon's commitment to ensuring veterans and first responders receive the life-changing care they deserve. Every program is backed by data, with proven outcomes that show measurable improvements in quality of life.

About the SHARE Military Initiative

Shepherd Center's SHARE Military Initiative is designed as a comprehensive rehabilitation program for service members and veterans living with brain injury and PTSD, emphasizing individualized plans because "every brain injury is unique."

SHARE describes providing care at no out-of-pocket cost and building a dedicated, veteran-experienced interdisciplinary team—spanning neurology; physical and rehabilitation medicine; PT/OT; speech-language pathology; recreation therapy; neuropsychology/psychology/counseling; cognitive rehabilitation; vestibular evaluation and treatment; vocational/community re-entry supports; pain management; peer support; and substance-use psychology.

The program's intensive tracks are structured to support both treatment and reintegration: the comprehensive day program includes daily therapy over multiple weeks, coordinated visits with a broad care team, and up to 12 months of transition-to-community follow-up sessions with a life coach, reflecting an emphasis on continuity beyond the initial treatment episode.

SHARE's model is not "one size fits all," highlighting a highly personalized approach and framing philanthropic support as essential to making this transformational care available at no cost to participating veterans and service members.

The great work at SHARE is made possible by generous donations from Avalon Action Alliance and other donors.

STATEMENTS FOR THE RECORD

Prepared Statement of Association of VA Neurology Services (AVANS)

Chairman, Ranking Member, and Members of the Committee:

Thank you for the opportunity to discuss the care of Veterans with traumatic brain injury (TBI) and the role of the Neurology Centers of Excellence within the Veterans Health Administration (VHA). It is an honor to represent the clinicians, researchers, and staff who care for Veterans living with the enduring consequences of TBI.

After 35 years of Federal service, I retired from the Department of Veterans Affairs (VA) on September 30, 2025. At the time of retirement, I was the Executive Director of the national Neurology Clinical Programs and had supervisory responsibility for the 4 national networks of neurology Centers of Excellence (CoEs) and 3 national neurology tele-programs. My statement expresses my own opinions and is endorsed by the Board of Directors of AVANS.

Traumatic brain injury (TBI) remains one of the defining injuries of modern military service. While some injuries are immediately apparent, many TBIs—particularly mild TBIs and concussions—produce symptoms that may persist for months or years and are often invisible to others. Symptoms may begin months or even years following injury. Veterans with TBI frequently experience chronic headaches, seizures, cognitive changes, sleep disturbances, mood and behavioral symptoms, and, in some cases, increased long-term neurological risk. These effects can interfere with employment, relationships, and overall quality of life. For many Veterans, TBI is not a single episode of care; it is a chronic neurological condition requiring coordinated, longitudinal management.

The Neurology Centers of Excellence play a central role in meeting that need. TBI is neurologically complex and often intertwined with other conditions such as posttraumatic stress disorder (PTSD), chronic pain, substance use disorders, and orthopedic injuries. Accurate diagnosis and effective treatment require subspecialty expertise in areas such as epilepsy, headache medicine, and neurodegenerative disease. The Centers of Excellence ensure that this expertise is available across our national system and that Veterans receive care aligned with the best available evidence, regardless of geography.

For example, chronic headaches are the most common long-term sequela of TBI. The network of Headache CoE hubs and sites provide integrated, multidisciplinary care for refractory migraine and other headache disorders, often achieving significant improvements in function and quality of life that years of isolated care, whether in VHA or in the community, have failed to provide. The risk of epilepsy is increased both in the short-term and long-term following TBI. The VHA network of Epilepsy CoEs provide advanced diagnostic services such as inpatient video and electroencephalographic monitoring to confirm the diagnosis of epilepsy and determine the optimal medical, or in refractory cases surgical therapies. Veterans having episodic events may be found after diagnostic evaluation to have a functional disorder, paroxysmal nonepileptic seizures (PNES). More common in Veterans than in the general population, and often coexisting with PTSD, the VHA Epilepsy CoEs have pioneered the development and implementation of a network of clinicians trained in Neuro-Behavioral Therapy that effectively treats this disorder but is generally not available outside VHA. The incidence of neurodegenerative disorders such as Parkinson's disease and Alzheimer's disease is increased in Veterans with a history of TBI. To address the former, the VHA Parkinson's Disease Research, Education and Clinical Centers (PADRECCs) provide access to experts in Parkinson's Disease and other movement disorders for both diagnosis and management of therapies.

One of the most important contributions of the Neurology Centers of Excellence is the standardization of care across VHA. As the largest integrated healthcare system in the country, VHA serves Veterans in urban tertiary medical centers as well as in rural community clinics. Without systemwide coordination, practice patterns can vary. The Centers develop and disseminate evidence-based clinical pathways for

the evaluation and management of post—traumatic headache, seizure disorders, cognitive impairment, and other neurological sequelae of TBI. They support clinical consultation networks and quality oversight processes that reduce unwarranted variation and promote consistent, high-quality care. A Veteran in a rural facility should receive the same standard of neurological assessment and management as a Veteran treated in one of our flagship medical centers. This may be achieved through virtual modes such as video telehealth and remote interpretation of studies such as electroencephalograms (EEGs), as well as through in-person care by interfacility referral. There is a national shortage of neurologists, especially in rural areas. The CoE networks allow Veterans anywhere to receive the benefits of neurology subspecialist care and oversight that is unavailable in rural areas, which often lack even general neurologists.

The Centers also operate in close partnership with VA's Polytrauma Rehabilitation System and rehabilitation medicine programs. Moderate and severe TBI frequently occurs in the context of polytrauma, and even mild TBI is often accompanied by comorbid psychiatric and physical conditions. Effective care demands coordination across neurology, mental health, physical medicine and rehabilitation, pain management, social work, and primary care. The Neurology Centers of Excellence strengthen these interdisciplinary connections and help ensure that Veterans receive comprehensive rather than fragmented care. This multidisciplinary coordinated care is generally unavailable within other health care systems, especially in rural or underserved areas of the country.

Access is another critical dimension of VHA care. Many Veterans live far from major medical centers. Through tele-neurology services, electronic consultation models, and remote interpretation of diagnostic studies such as electroencephalograms, the Centers extend subspecialty neurological expertise into rural and underserved areas. This model reduces travel burdens, shortens time to specialty input, and promotes equity in access to care.

Advanced diagnostic and therapeutic capabilities are also concentrated within the Centers of Excellence. Veterans with refractory post-traumatic epilepsy, chronic migraine and post—traumatic headache syndromes, functional neurological disorders, or complex cognitive impairment benefit from referral to clinicians with focused subspecialty training. The Centers serve as referral hubs for these complex cases while also supporting frontline clinicians managing less complicated presentations.

In addition to direct clinical care, the Neurology Centers of Excellence serve as engines of translation from research to practice. The VHA's integrated electronic health record and large Veteran population uniquely position it to conduct longitudinal research on TBI and its long-term neurological consequences. The Centers participate in and support VA-funded research efforts, evaluate emerging diagnostic tools and biomarkers, and integrate new evidence into clinical pathways. This research-to-practice cycle ensures that Veterans benefit from advances generated within the very system designed to serve them.

The Centers also contribute meaningfully to opioid stewardship. Chronic post-traumatic headache and pain are common following TBI. In the past, these conditions often led to significant opioid exposure. Neurology specialists within the Centers promote evidence-based, multimodal approaches to headache and pain management that reduce reliance on opioids and enhance patient safety. Close collaboration with mental health and addiction medicine services further strengthens the ability to mitigate risk while addressing suffering.

Workforce development is another essential function. The Centers provide education and training to neurologists, advanced practice providers, and primary care clinicians throughout the system. Through continuing education programs, case conferences, and clinical decision support tools, they build durable capacity across VHA rather than concentrating expertise in isolated locations. This investment in education ensures that expertise remains embedded within the broader system of care.

The impact of these efforts is seen in earlier identification of neurological complications, more precise diagnosis that distinguishes TBI-related symptoms from overlapping psychiatric and neurologic conditions, improved management of seizures and headaches, reduced avoidable emergency utilization, and better functional outcomes. Importantly, the Centers support long-term surveillance of Veterans with TBI who may face elevated risk for later neurological conditions, ensuring that care does not end once the acute injury has stabilized.

Given the central role of the neurology CoEs to the care of Veterans with TBI, as well as other neurological conditions, it is concerning that the Centers face several operational challenges. Budgets have generally increased in recent years, but often unpredictably. The neurology Centers are based within VA Medical Centers and their staff are hired locally. Even though CoE operations are supported through national specific purpose funds, individual medical centers may be reluctant to hire

new staff if future funding may be cut or fail to provide for annual cost-of—living and other increases. Due to the recent focus on downsizing VHA staffing, a number of key positions are currently vacant due to clinical and administrative staff reassignment, resignation to accept positions outside VHA, or opting for early or standard retirement. Key vacancies include positions of national significance, such as regional CoE Directors and national CoE network administrators, as well as local CoE clinicians and other staff. In times of uncertainty concerning the stability and desirability of Federal employment, vacancies are proving hard to fill, and declinations of VHA job offers are now common. Even though full-time CoE hires are permitted under current policy, confusion remains regarding the rules and limits pertaining to CoE staffing. This can unintentionally place the Centers in competition with the host facilities for hiring.

The neurology Centers must retain large populations of Veterans to pursue their clinical, training and research missions. Recent trends to outsource Veteran care to the community threaten the ability to deliver on these missions. Further, measures that would use VA appropriations to fund extramural research related to TBI, such as the proposed BEACON Act, if passed, could drain vital resources from ongoing research, training and clinical programs, diverting funds to institutions with uncertain track records and limited experience working with the Veteran population.

A final concern, one not limited to the neurology CoEs but relevant to clinical care throughout VHA at the present time, is the changes in the workplace environment and culture in which VHA employees provide care. The VHA has long promoted the path to becoming a high reliability organization, with an obsessive attention to accuracy and avoidance of clinical errors, in a climate of psychological safety that encourages reporting of mistakes and "near misses" in a concerted effort to prevent patient harm. Unfortunately, these principles appear to be in abeyance at present. Clinicians are anxious about the security of their jobs due to real or threatened staffing reductions or reassignments, are stretched thin due to increased vacancies that go unfilled following staff departures, and in some cases are forced into cramped, inadequate space in overcrowded VA medical centers due to the return to office mandate. Restoration of psychological safety and a positive workplace culture and environment will ensure optimal safety for all Veterans cared for in VHA facilities.

In closing, the Neurology Centers of Excellence function as force multipliers within the Veterans Health Administration. They standardize care across a vast national system, extend subspecialty expertise to rural communities, translate research into clinical practice, strengthen patient safety, and support interdisciplinary, lifelong management of traumatic brain injury. TBI is not simply an acute event; for many Veterans, it is a lifelong condition. It is an obligation to provide coordinated, evidence-based neurological care that honors their service and addresses both immediate and long-term needs. The neurology Centers help Veterans with TBI on their journey from disability to fully functional, employed, and productive members of their communities. Adequate funding of the Centers, appropriate hiring authority for Center staff, and an improved work culture and environment generally, are required to allow the Centers to continue to provide optimal care to all Veterans in need of their expertise, including those with a history of TBI.

Thank you for your continued oversight and support of Veteran healthcare.

Prepared Statement of Wounded Warrior Project

Chairwoman Miller-Meeks, Ranking Member Brownley, and Members of the Subcommittee – thank you for inviting Wounded Warrior Project to share our perspective on Department of Veterans Affairs (VA) care for veterans with traumatic brain injury (TBI). Supporting veterans and Service members with invisible wounds like TBI and post-traumatic stress disorder (PTSD) has been central to our mission to honor wounded warriors, and our advocacy before Congress has been shaped by our experience delivering life-changing and life-saving care to this community.

Wounded Warrior Project (WWP) is built upon our promise to meet the needs of warriors and family support members no matter what. Since 2003, that promise has included programming designed to assist catastrophically disabled warriors with moderate and severe TBI. In Fiscal Year 2025, we delivered nearly 285,000 hours of in-home and local care through our Independence Program. This program provides personalized care and ongoing, innovative support to help these warriors remain at home and live more independent lives for as long as possible. Currently serving nearly 1,000 warriors, the Independence Program (IP) is a small but critical

part of a larger ecosystem of care and support that spans a wide range of needs veterans have now and will have into the future.

Nearly one in five post-9/11 veterans sustained at least one TBI, and over 500,000 TBIs have been diagnosed in Department of Defense (DoD) personnel since 2000.[1] Research indicates that this figure could be even higher due to undocumented injuries in Iraq and Afghanistan before improvements in documentation implemented in November 2006.[2] Most of these individuals make a full recovery from their injuries, especially if they only had a single mild TBI, but some require lifelong care and support. At least one report has concluded that 1 in 4 veterans who have been hospitalized with TBI will develop long-term disability.[3]

Injury data like the above is underscored by the fact that modern medicine and recent improvements to the delivery of in-theater care have saved more lives than ever before.[4] Yet while many survived their wounds on the battlefield, recent scholarship has found excess mortality rates among post-9/11 veterans compared with the general U.S. population, particularly among veterans with TBI. Research funded by DoD and the Department of Veterans Affairs (VA) concluded that post-9/11 veterans have higher death rates than expected, and those who had traumatic brain injuries had an even greater risk of dying. More specifically, "[w]hile veterans exposed to moderate/severe TBI accounted for only 3 percent of the total post-9/11 Veteran population, they accounted for 34 percent of total excess deaths observed, which was 11-fold higher than would otherwise be expected."[5] This study and others draw particularly close attention to the elevated risk of suicide that veterans face after TBI, particularly if those injuries are more severe.[6]

As these figures illustrate, we believe that TBI care must continue to be an area of critical focus for Congress, VA, and other community stakeholders. We are pleased to direct particular attention to several key areas where near-term action will create the long-term support and sustainability that so many need.

Care Journey Overview: The Phases of TBI Care

The continuum of care for TBI spans acute care to long-term support. While TBIs are generally diagnosed along a spectrum of mild, moderate, and severe, this classification based on the severity of the injury does not necessarily correlate to the nature of symptoms or recovery prognosis. Each TBI patient's journey will have unique combinations of mental, physical, behavioral, and cognitive impacts alongside decisions about when, where, and how frequent health care interventions take place.

In ideal scenarios, veterans will have access to a continuum that integrates clinical treatments with supportive services, but veterans often experience regressions. Issues can arise due to improper diagnoses (perhaps due to a shortage of specialized TBI care providers), inconsistent follow-up care (routinely associated with a multidisciplinary care approach versus more coordinated interdisciplinary care), delays in intervention, and general lack of knowledge of how and where to access the most appropriate level of care and resources. As observed by the National Academies, "[f]or many people with TBI and their families, a 'continuum of care' does not exist. Their journey is more aptly characterized as a fragmented series of silos (prehospital assessment, potential emergency department or hospital-based acute

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[1] DEF. HEALTH AGENCY, U.S. DEP'T OF DEF., https://www.health.mil/Military-Health-Topics/Centers-of-Excellence/Traumatic-Brain-Injury-Center-of-Excellence/DOD-TBI-Worldwide-Numbers (last visited Jan. 9, 2026).

[2] Rachel P. Chase & Remington L. Nevin, *Population Estimates of Undocumented Incident Traumatic Brain Injuries Among Combat-Deployed US Military Personnel*, 30 J. HEAD TRAUMA REHAB. E57 (2015) (*available at* https://journals.lww.com/headtraumarehab/Abstract/2015/01000/Population__Estimates__of__UndocumentedIncident.14.aspx).

[3] Yll Agimi et al., *Estimates of Long-Term Disability Among US Service Members With Traumatic Brain Injuries*, 36 J. HEAD TRAUMA REHAB. 1 (2021) (*available at* https://pubmed.ncbi.nlm.nih.gov/32472830/).

[4] Valecia Dunbar, Trauma Registry Yields *Significant Increase in Traumatic Injury Survival Rates*, U.S. ARMY (June 25, 2015), https://www.army.mil/article/150990/trauma__registry__yields__significant__increase__in__traumatic__injury__survival__rates.

[5] Jeffrey Howard et al., *Association of Traumatic Brain Injury With Mortality Among Military Veterans Serving After September 11, 2001*, 5 JAMA NET. OPEN (2022) (*available at* https://doi.org/10.1001/jamanetworkopen.2021.48150).

[6] Lisa Brenner et al., *Associations of Military-related Traumatic Brain Injury with New-onset Mental Health Conditions and Suicide Risk*, 6 JAMA Net. Open (2023) (*available at* https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2807787); Jeffrey Howard et al., *Suicide Rate Trends for Post–September 11, 2001, US Military Veterans*, 8 JAMA NET. OPEN (2025) (*available at* https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2838445); Kayla McIntire et al., *Factors Increasing Risk of Suicide After Traumatic Brain Injury*, 35 BRAIN INJ, 151–63 (2020) (*available at* https://doi.org/10.1080/02699052.2020.1861656).

care, perhaps inpatient or outpatient rehabilitation, and possibly additional community or long-term services and supports) [...]."[7]

Despite this observation, an overview of stages in the TBI care continuum can help frame areas for congressional action:

- **Acute Phase**: The immediate care provided in trauma centers that focus on stabilization. Interventions like surgery and pain control are most often provided at military treatment facilities and the VA's network of Polytrauma Rehabilitation Centers.
- **Post-Acute Rehabilitation Phase**: After stabilization care, veterans and Service members may receive rehabilitation to restore function, addressing cognitive and behavioral deficits and comorbidities. This stage may last weeks, months, or even years, depending on the severity of the injury and incorporate elements of physical therapy, occupational, therapy, speech and language therapy, cognitive rehabilitation therapy, and psychological support. For veterans using VA, this care can take place in intensive inpatient and/or outpatient settings or Polytrauma Rehabilitation Centers.
- **Long-Term Phase**: During this segment, patients will focus on maintenance of therapies, as well as home and/or institutional support to regain or maintain independence and fulfill behavioral plans. This phase may involve VA home and community-based services including Home Based Primary Care, Adult Day Health Care, and Skilled Home Health Care, as well as VA-purchased care services like Homemaker/Home Health Aide, Veteran Directed Care, and Medical Foster Homes. For complex cases, residential-based care may be provided at VA Community Living Centers, Skilled Nursing Facilities, or at community-based nursing homes.
- **Community Reintegration**: As care becomes more familiar, veterans may move on to focus on independence, addressing isolation and other health issues, while incorporating active and ongoing case management. Aside from health care support, some veterans may benefit from VA services like the Veteran Readiness & Employment program to re-enter the workforce in a new capacity.

While survival and early rehabilitation outcomes have improved, the continuum of care has not evolved to address the lifelong needs of this population. When long-term needs are not addressed, predictable downstream impacts occur including:

- Functional regression and loss of independence resulting from discontinuation of ongoing rehabilitation and long-term supports;
- Higher long-term system costs driven by crisis-based care, emergency department utilization, and avoidable hospitalizations;
- Increased caregiver burden and burnout as veterans' needs increase and caregivers age alongside them, often impacting the entire family unit;
- Premature or inappropriate placement in institutional settings that are not designed to meet the clinical, behavioral, or rehabilitative needs of younger and mid-life veterans with TBI and lack proper government oversight and support personnel; and
- Increased social isolation and elevated suicide risk, with TBI recognized as an independent risk factor for mortality.

Based on these assessments and considerations above, we offer several areas where congressional action can improve the TBI continuum of care.

Improving Case Management

Service members and veterans living with severe injuries or multiple comorbid conditions often navigate some of the most fragmented care systems in the country. Many rely on multiple Federal and State programs at the same time, receiving care through Military Treatment Facilities (MTFs), TRICARE, VA, Medicare, Medicaid, private insurance, and local programs – each with its own eligibility requirements, coverage limits, and care-coordination processes. Without consistent, knowledgeable case management, transitions between these systems frequently lead to gaps in services, delayed treatment, and increased strain on caregivers. For veterans with TBI or complex neurological conditions, these disruptions can undermine health, independence, and long-term stability.

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[7] NAT'L ACADS. OF SCIENCES, ENG'G, AND MED., TRAUMATIC BRAIN INJURY: A ROADMAP FOR ACCELERATING PROGRESS 167 (2022).

In a pair of 2007 memorandums of understanding, DoD and VA launched the Federal Recovery Coordination Program (FRCP) and designated Federal Recovery Coordinators as the "ultimate resource" for monitoring the implementation of services for wounded, ill, and injured Service members. At the time, these actions recognized that because of the dramatic changes in military battlefield medicine and rapid evacuation from the combat theatre, many returning Service members, and subsequently veterans, have multiple complex medical and mental health problems, including TBI, SCI, amputations, burns, and PTSD. Due to the complex nature of their benefits and health care needs, these warriors may receive care from many providers in multiple facilities, including MTFs, VA Medical Centers (VAMCs), private hospitals, rehabilitation facilities, or through home health agencies. Transitions among these facilities and providers, absent coordination, can result in care and benefits gaps.

The challenges that existed then persist to this day, and health systems must remain committed to uniform training for recovery coordinators and medical and nonmedical care/case managers, efficient tracking systems, and commitments to comprehensive plans for the seriously injured. As time has passed however, the FRCP was consolidated into the Federal Recovery Consultant Office (FRCO) in February 2018 in response to the Presidential Executive Order, "Comprehensive Plan for Reorganizing the executive branch." While this shift may have created some efficiencies, WWP encourages a fresh assessment of whether the FRCO is sufficiently resourced to address the reforms that have not been fully realized. Additionally, we believe that similar efforts can be undertaken to support a broader population of veterans with complex needs and should include steps to ensure central oversight of policy implementation.

VA's Spinal Cord Injury/Disorder (SCI/D) System of Care offers a parallel approach that may be considered and illustrates an established example of how a condition-specific, lifelong care continuum can be structured within the Veterans Health Administration. The SCI/D model works through a hub-and-spokes network of 25 regional centers ("hubs") supported by local VA facilities ("spokes"), allowing highly specialized, interdisciplinary care to be delivered close to where veterans live while maintaining access to expert clinical teams and necessary services.

These centers provide comprehensive, lifelong care spanning acute medical and surgical treatment, intensive rehabilitation, outpatient follow-up, home care programs, annual evaluations, and tailored long-term support aimed at maximizing independence and quality of life.

Care is coordinated across medical, psychosocial, vocational, and rehabilitation domains, with dedicated providers trained in the unique needs of spinal cord injury and disorder populations. Both primary and specialty care services remain integrated throughout the veteran's lifespan, with interdisciplinary teams actively managing and anticipating evolving needs over time. This structure not only supports continuity of care after initial injury but also promotes community reintegration, functional maintenance, and sustained caregiver support. A similar dedicated program for TBI could help address current fragmentation in care pathways, improve long term outcomes, and ensure that veterans with brain injury have access to care that is both specialized and continuous rather than episodic or plateau-driven within traditional silos.

Expanding Access to Assisted Living

While many veterans and families prefer aging in place, home-based care is not safe or feasible for all individuals due to co-occurring behavioral and cognitive challenges, increasing medical complexity, aging caregivers, and limited natural support networks. When aging in place is no longer appropriate, families are often forced to make care decisions in crisis. In the absence of viable alternatives, families face an unacceptable binary choice: remain at home beyond what is safe or appropriate, or enter traditional geriatric nursing facilities that are ill-equipped to meet the clinical, behavioral, rehabilitative, and social needs of younger and mid-life veterans with TBI.

Wounded Warrior Project's current service to nearly 1,000 severely wounded veterans with moderate or severe TBI has shown us that phases of progressive independent living are missing as care options. Currently, slightly more than 7 percent of our Independence Program participants (average age 45.6) reside in nursing homes/institutions, highlighting the likelihood of an inappropriate placement due to age-generational gap, inability to find an age-suitable facility and/or inability of an institutional or non-institutional caregiving network to provide for the individuals in a safe or effective manner. Traditionally, VA provides clinical services to veterans who suffer the effects of TBI; however, many veterans with TBI may benefit from treatment in an intensive rehabilitation facility to assist with skills allowing for in-

creased independence. Because the facilities are generally residential and the VA does not provide veterans with housing (with some exceptions), accessibility to such programs is limited or requires subsidized payment from other sources to cover the "housing" expense.

The Assisted Living for Veterans with TBI (AL-TBI) pilot program, which ran from 2009 to 2018, provided some of these veterans with placement in private TBI rehabilitation facilities and assumed the living costs that may have otherwise put this treatment beyond their reach. After the program ended, an evaluation by VA concluded that participants had experienced improvements in physical and emotional health, TBI symptoms, and other outcomes. In its place, VA now offers a TBI-Residential Rehabilitation Program, but enrollees must pay for their own room and board, something many veterans cannot afford.

Solutions to remove this financial barrier – and to improve the associated care coordination that can span several systems – are sorely needed. TBI rehabilitation facilities provide a variety of services, primarily therapy in individual and group settings. At the same time, the facilities vary widely in other offerings and lack standardization because individual injuries and the effectiveness of each treatment can vary so significantly.[8] The tools used to measure progress as well as the methods by which therapy is provided or defined may also contain nuance and disparity between facilities.[9] These nuances induce "difficulties [with] outcome analysis related to the blurring of program labels, categories, and definitions" while limited uniform populations make randomized trials and studies nearly impossible.[10] Studies indicate that treatment standardization and standard measurements of progress would assist in formalized rehabilitation programs with improved overall treatment.[11] Further, anecdotal feedback suggests that veterans are most likely to benefit from particular facilities that can accommodate the difficulties associated with behavioral problems (often rooted in physical injury to the brain) in addition to other TBI symptoms. Such facilities are very limited but are best positioned to support veterans' needs.

In sum, the AL-TBI pilot program provided a beneficial service to warriors and caregivers during its tenure but has left a gap to be filled by families, private and other non-VA care, often putting the financial burden on the warrior and/or caregiver. Additional urgency is created by the fact that many of these caregivers are aging beyond their ability to provide the necessary support at home. These challenges continue to highlight the need for durable, well-coordinated, and adequately resourced programs capable of supporting veterans with lifelong injuries, not only for months or years, but over a full lifespan.

Increasing Special Monthly Compensation

The Sharri Briley and Eric Edmundson Veterans Benefits Expansion Act represents one of the most meaningful opportunities in decades to strengthen financial security for the Nation's most severely disabled veterans. A key provision of this legislation would increase the amount of Special Monthly Compensation (SMC) by $10,000 annually for the most severely disabled veterans – those who depend on regular aid and attendance of another, including for residuals of TBI. SMC is arguably the most important ancillary benefit for veterans with severe, service-connected disabilities. SMC-T in particular, which is provided to veterans with TBI, can help offset caregiver burden and the increasing costs of high-quality care – both of which can keep veterans at home and of institutional living.

Wounded Warrior Project supports this legislation because it reflects the core principle that those who sacrificed the most deserve the strongest safety net. Far too many families shoulder around-the-clock caregiving responsibilities with inadequate financial support, particularly families like the Edmundsons, whose daily lives revolve around complex medical needs following devastating combat injuries.

Coordinating Action on Blast Overpressure

Military service often exposes Service members to blast overpressure, a rapid increase in air pressure generated by explosions or blast waves that exceed normal atmospheric conditions. Both high-intensity and/or repeated exposures are increasingly associated with cumulative neurological effects, including neuroinflammation,

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[8] *See, e.g.*, Tina Trudel, et al., *Brain Injury Treatment Models and Challenges for Civilian, Military and Veteran Populations*, 44 J. REHAB. RESEARCH & DEV. 1007 (2007) (*available at* https://www.brainline.org/article/brain-injury-treatment-models-and-challenges-civilian-military-and-veteran-populations).

[9] *Id.*

[10] *Id.*

[11] *Id.*

cognitive decline, elevated risk of traumatic brain injury, and co-occurring mental health conditions.[12] Those at highest risk include armorers, artillery and gunnery personnel, combat engineers, explosive ordnance disposal specialists, special operations forces, and medical personnel assigned to expeditionary units – as well as individuals working with shoulder-mounted weapons, .50 caliber systems, and indirect fire platforms. While the DoD has taken important steps to reduce blast exposure during training through increased standoff distances, limits on live-fire events, and protective equipment, these measures largely focus on prevention for active-duty personnel, and do not address the long-term health consequences for Service members and veterans already affected.

The *Blast Overpressure Research and Mitigation Task Force Act* (H.R. 6444) would strengthen coordination between the DoD and VA through a Joint Executive Committee (JEC) task force. By mandating annual reports, cross-agency coordination, and integration of mobile, longitudinal diagnostics, the bill would create the infrastructure needed to translate emerging evidence into standardized screening, targeted mitigation strategies, and benefits adjudication for blast-exposed veterans. Further, the inclusion of Task Force recommendations related to VA claims processing and disability evaluations hold the promise of ensuring that veterans affected by blast overpressure injuries are connected to the care and support they have earned through their service.

Increasing Commitment to TBI Research

The congressionally Directed Medical Research Programs (CDMRP) represent a proven and accountable model for investing Federal research dollars to achieve high-impact outcomes. Through its unique, coordinated approach, CDMRP has accelerated advances in patient care, driven breakthrough technologies, and delivered tangible results in areas of critical need – particularly with diseases and conditions that have historically received limited research attention. Congress' sustained investment of more than $2.5 billion in the Traumatic Brain Injury and Psychological Health Research Program, led by the Military Health System[13], has resulted in the award of over 297 research studies for nearly 500,000 Service members diagnosed with traumatic brain injury.[14] These efforts have strengthened DoD's ability to prevent, detect, treat, and rehabilitate TBI, while improving psychological health outcomes essential to force readiness and long-term veteran well-being. Continued congressional support for CDMRP is essential to maintain momentum, protect prior investments, and ensure that the DoD can meet its obligations to Service members and their families through evidence-based solutions to TBI and psychological health challenges.

Precision Medicine for TBI Care

Despite increased awareness, substantial gaps remain in understanding the long-term effects of repetitive low-level blast exposure and chronic mild TBI. Emerging evidence links these exposures to measurable brain changes, impairments in balance and gait, and increased risk of suicide among veterans. Individuals diagnosed with TBI may continue to suffer from lasting effects that overlap with mental health conditions, substance use disorders, and chronic physical symptoms. These complex and interconnected challenges demand a more precise, data-driven approach to care.

Precision medicine tailors healthcare treatments and interventions to each patient's unique characteristics, including their genetic makeup, lifestyle, and environment. Instead of a one-size-fits-all model, precision medicine uses advanced diagnostic tools – such as genetic testing, biomarker analysis, and imaging techniques – to identify the most effective therapies for individuals. In brain health, this approach takes a specialized form, focusing on neurological and psychiatric conditions. Clinicians analyze a patient's brain structure, function, genetic profile, and cognitive patterns to create targeted treatment plans for conditions like Alzheimer's disease, Parkinson's disease, depression, and TBI. This personalized strategy enhances therapeutic outcomes, reduces side effects, and ensures lasting benefits. Specifically

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[12] *See, e.g.*, Andrea Diociasi et al., *Distinct Functional MRI Connectivity Patterns and Cortical Volume Variations Associated with Repetitive Blast Exposure in Special Operations Forces Members*, 315 Radiology (2025) (*available at* https://pubmed.ncbi.nlm.nih.gov/40167438/); Kyle Bourassa et al., *Traumatic Brain Injury and Accelerated Epigenetic Aging Among Post–9/11 Members*, J. HEAD TRAUMA REHAB. (2025) (*available at* https://pubmed.ncbi.nlm.nih.gov/40828005/).

[13] Cong. Directed Res. Prog., *Traumatic Brain Injury and Psychological Health Research Program*, U.S. DEP'T OF DEF. (2025), https://cdmrp.health.mil/tbiphrp/pbks/TBIPHRP%20Summary%20Sheet_22July25.pdf.

[14] Cong. Directed Res. Prog., *Traumatic Brain Injury and Psychological Health*, U.S. DEP'T OF DEF. (2025), https://cdmrp.health.mil/tbiphrp/default.

for veterans, this approach can help identify those at higher risk for long-term neurological or psychological effects, such as chronic traumatic encephalopathy (CTE), PTSD, and cognitive decline. The *Precision Brain Health Research Act* (S. 800) would advance a more systematic and longitudinal approach by directing VA to implement a coordinated 10-year research strategy and establish a structured data sharing partnership with the DoD. This framework utilizes the promise of precision medicine and would improve tracking of exposure history, support identification of biomarkers associated with brain and mental health conditions, and strengthen VA's ability to deliver earlier, more accurate diagnoses.

Concluding Remarks

Wounded Warrior Project extends our gratitude to the Committee for its sustained focus on TBI research, treatment, and long-term support. A TBI is not an isolated event, it is a chronic condition that requires lifelong management. journey that requires a coordinated continuum of care, strong case management, appropriate residential and community-based options, meaningful financial support for families, and continued investment in cutting-edge research. From strengthening recovery coordination and restoring viable assisted living pathways, to advancing Special Monthly Compensation and deepening our understanding of blast overpressure and precision brain health, your leadership shapes whether veterans with TBI experience fragmented systems or integrated, life-sustaining care. We are particularly encouraged by congressional efforts to modernize research through precision medicine and cross-agency collaboration, ensuring that emerging science translates into earlier diagnoses, targeted interventions, and improved long-term outcomes.

The men and women who have sustained these invisible wounds in service to our Nation deserve nothing less than a system built for durability, dignity, and lifelong support. We stand ready to work alongside you to ensure that policies enacted today create a sustainable, evidence-based framework of care that honors their sacrifice not only in the immediate aftermath of injury, but across the full span of their lives. Thank you for your continued commitment to these warriors and the families who remain steadfast beside them.

Document for the Record Submitted by Julia Brownley

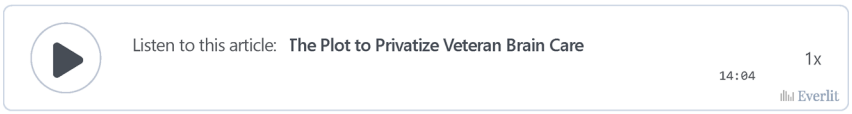
HEALTH AND SOCIAL POLICY

The Plot to Privatize Veteran Brain Care

The VA has developed elaborate capacity to treat traumatic brain injuries. Billionaires want to divert that funding to their own programs.

Credit: Don Ryan/AP Photo

BY **RUSSELL LEMLE** AND **JASPER CRAVEN**
FEBRUARY 5, 2026



In early January, Reps. Jack Bergman (R-MI) and Sarah Elfreth (D-MD) introduced the **BEACON Act**, a bill that pledges to enhance care for a signature wound of the global war on terror: traumatic brain injuries, or TBI.

The legislation, currently moving through the House Veterans' Affairs Committee pipeline, would award $60 million in grants over three years to private entities for TBI treatment and research, explicitly circumventing well-established clinical **channels within the Department of Veterans Affairs** (VA), which are widely considered the best in the world.

The VA's innovative TBI work **launched** in 2008, with the establishment of a brain bank to collect and study postmortem brain and spinal cord tissue to better understand trauma to that organ. This paved the way for a series of vital discoveries, including a 2016 report that **identified** the cerebellum as particularly vulnerable to repeated blast exposures. Today, veterans with TBI currently have access to evidence-based psychotherapies refined over two decades of clinical practice. The VA's Polytrauma System of Care includes four Polytrauma Rehabilitation Centers, 21 Polytrauma Network Sites, and the VA Translational Research Center for TBI and Stress Disorders. There's also VA's Brain Health Network and Coordinating Center and a joint VA-DOD Brain Injury Center that has developed diagnostic and monitoring tools.

More from Russell Lemle | ***Jasper Craven***

The private sector has nothing commensurate with this level of care. And yet this bill would push TBI treatment out to private grantees, part of the accelerating movement to privatize the entire VA—even its signature, best-in-class programs. As the ***Prospect* recently reported**, notorious billionaire Steve Cohen is aiming, via another recently introduced bill called the RECOVER Act, to outsource the VA's excellent mental health care to clinics like his own Cohen Veterans Network. While Cohen initially heralded this work as a philanthropic venture, he is now advocating for the federal government to help offset his outlay.

The story of the BEACON Act is eerily similar. The act aims to divert resources from the VA's world-class TBI and PTSD programs by creating a parallel treatment framework, this one also largely backed by a billionaire, the late Republican mega-donor Bernie Marcus, who co-founded Home Depot.

Philanthropists are welcome to give to causes that move them—and their generosity merits thanks. But billionaire patrons shouldn't then approach taxpayers, hat in hand, begging for reimbursement by dismantling important public institutions. The BEACON Act, like RECOVER, is a reverse Robin Hood scheme: taking money the VA desperately needs to continue caring for veterans and handing it to entities funded by wealthy benefactors, who go on to tout their role in helping America's veterans.

LIKE COHEN, WHOSE SON WENT TO AFGHANISTAN, Marcus had a soft spot for veterans. His brother fought in the Battle of the Bulge during World War II; Marcus said he tried to enlist but was turned down by the service for being underage. His compassion for veterans, however, was matched by fierce contempt for the VA.

In a 2016 **interview**, Marcus, who died in 2024, didn't mince words: "The Veterans Affairs is disgusting … I think the VA is the most disgraceful organization in America today—by far. It's bureaucratic ridden. It's inadequate. The care is not there." His solution? "Get rid of it. Let them be treated by doctors and hospitals all over the country."

During that year's presidential election, he shelled out **$7 million** for Donald Trump, making him the president's second-biggest single backer. He also poured millions into pro-Israel groups, with at least $2 million directed to the American Israel Public Affairs Committee's PAC, which is called United Democracy Project, or UDP.

Over his life, Marcus also donated **$2.7 billion** to various charitable causes, including a constellation of organizations providing private care to veterans. In 2019, he co-founded the Avalon Action Alliance, which serves as an umbrella organization for 20 programs, many of them also funded by Marcus, that deliver free services to veterans, service members, and first responders suffering from TBI, post-traumatic stress, and substance use disorders.

Marcus gave **$24.7 million to Avalon** during its first five years, plus millions more to key programs within the network. They included the Marcus Institute for Brain Health (beginning with $38 million from the Marcus Foundation), the Shepherd Center SHARE Military Initiative (founded and funded by Marcus with tens of millions), and the Boulder Crest Foundation, which received roughly $20 million from Marcus to provide residential programs focused on achieving what it calls "post-traumatic growth." These contributions were amplified by $50 million from fellow billionaires, including Home Depot co-founder Arthur Blank, George Joseph of Mercury Insurance, Silicon Valley entrepreneur James Clark, and real estate and transportation tycoon Harry Weinberg. Marcus's foundation continues to donate along these lines to this day.

This sprawling network has, in turn, affiliated with a web of deep-pocketed veterans organizations, including America's Warrior Partnership (AWP), **Mission Roll Call**, and Wounded Warrior Project. These groups

donate to and **cross-list** one another as **partners**, united by a shared antagonism toward the VA's operations and a push for veterans to have unfettered access to private care. AWP has also received support from **TriWest Healthcare Alliance**, which has secured tens of billions in VA contracts to furnish private care appointments.

In September 2022, AWP's president and CEO, Jim Lorraine, testified before the House Committee on Veterans' Affairs. His opening **remarks** on the topic of the VA's suicide prevention efforts were scathing. "Personally, this is a disgrace," he charged. "Professionally, it is a failure."

Two years later, Lorraine **argued** before Congress that the VA should back off and let the private sector assume greater responsibilities: "It is not the role of the VA to expand into every community and bring more services 'in-house' to reduce the ability of veterans to use community care. Nor is it the role of the VA to continue expanding into communities and competing against private hospitals and medical centers."

Mission Roll Call is a program of AWP that collects veteran input through digital polls for congressional advocacy. Between 2021 and 2024, it was led by Cole Lyle, who frequently joined the chorus condemning the VA as "failing our men and women who served." According to a source with direct knowledge, Lyle—now with the American Legion—helped draft Project 2025's draconian policy proposals for the VA.

In response to a request for comment, Rep. Elfreth provided the following statement: "I introduced the BEACON Act with Representative Bergman because my grandfather was a veteran who suffered from PTSD. I saw firsthand the complex mental health challenges that our veterans and their families face. I've also seen how traditional VA treatments have come up short for decades to fully address the complex challenges our veterans face—and unfortunately, my family's story is far from unique."

"BEACON will support, not supplant, VA care," said Rep. Bergman in a statement. "Breaking news: people in Washington can be friends, and bipartisan cooperation isn't a scandal."

POTENTIAL RECIPIENTS OF BEACON GRANTS have actively supported the bill. Avalon's CEO was among three advocates present at the bill's publicized introduction, where he **acknowledged**: "This approach aligns directly with Avalon's current TBI study and will help us reach even more veterans and first responders with the care they need."

Boulder Crest was another early **endorser** of BEACON. Previously, Ken Falke, its chairman and founder, testified that the government should underwrite the financing of private philanthropic mental health ventures. Specifically, he **urged** lawmakers to "remove the funding caps," because presently "only 24 of our 132 annually delivered … programs are funded" by the VA.

The major lobbying force for these interests is the Nimitz Group and its powerful CEO, Justin Brown. He seemingly shares his clients' negative view of the VA. Regarding VA suicide prevention efforts, he **declared** last year: "There is not a government program with weaker data supporting its funding than this … For two decades, VA has used the same playbook with continued failed outcomes." HillVets, a veterans advocacy nonprofit that Brown founded and chairs, designated AWP as a "**nonprofit on fire**." It also named Boulder Crest as the 2019 "**nonprofit of year**."

According to **lobbying disclosures**, Brown did $320,000 worth of lobbying on veterans issues for Avalon and Boulder Crest in the last two years alone. Multiple sources report that Nimitz was deeply involved in drafting the BEACON Act and promoting it on Capitol Hill, and among veterans organizations. According to federal election data, Brown personally **donated** $2,500 to Bergman last May. Then, last November, when Brown got married, Bergman officiated, according to a source.

BEACON's Democratic co-sponsor, Sarah Elfreth, also has ties to Marcus's money. Her inaugural 2024 election was supported to the tune of $4.2 million by United Democracy Project (the AIPAC front group into which Marcus poured millions), according to Federal Election Commission **data**. Home Depot's political action committee also ponied up $2,500 for her race.

Surprisingly, one of BEACON's detractors is the VA itself. Under the current administration, agency leadership has supported virtually every conceivable avenue for privatizing veterans' care, but not this time. The VA's **testimony** described BEACON as counterproductive, noting that it "would create a new funding mechanism—derived from funds otherwise appropriated by Congress for 'general mental health care programs'—to develop new methodological approaches for 'control trials' … This uncertain return on investment of funds VA could otherwise use to provide evidence-based treatments for mTBI is inadvisable. Funds made available for clinical care should be used to deliver clinical care." Likewise, these grant mechanisms would also drain funds from "amounts otherwise available to VA … for research, education, and

consultation" operations of the VA's National Center for PTSD, "all of which are aimed at improving care for Veterans with PTSD."

Peer-reviewed studies of these donor-funded TBI initiatives are mixed. A **study** of Wounded Warrior Project's intensive outpatient program found positive neurobehavioral outcomes among 30 veterans treated with **CogSMART** (developed by VA researchers) coupled with other VA-honed interventions. The **SHARE Military Initiative** reviewed medical charts of 146 participants from a decade earlier and reported "better than average goal attainment" for neurobehavioral symptoms, though the specific treatments used or amounts provided were not detailed. The authors indicated that other factors, such as antidepressant medications, may have played an important role in outcomes.

Boulder Crest's **18-month longitudinal study**—backed by more than **$1 million from the Marcus Foundation**—reported positive improvement in post-traumatic stress symptoms of 184 participants who attended their retreat between 2019 and 2021. However, the organization's own **data** shows it served 1,146 individuals during that period, meaning the other 962 participants were mysteriously excluded from the analysis.

Meanwhile, the single publication from the Marcus Institute **indicated** that results of its program impact are still pending. **America's Warrior Partnership** has released no health outcome data, including for the $3 million it received in grants from the VA for suicide prevention interventions. Boulder Crest did not respond to our inquiries about their research.

BEACON is legislative bacon. It would create a windfall for billionaire-funded nonprofits—paying for existing services—while steadily eroding and privatizing the VA, one grant at a time.

Editor's note: This article has been updated to add comment from Rep. Elfreth.

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VA Employees in Shock Over Alex Pretti's Death, Administration Response

VA Secretary Doug Collins has not sent a personal statement to the staff about the killing of Pretti, an ICU nurse at the Minneapolis VA Medical Center.

BY SUZANNE GORDON JANUARY 28, 2026

A Billionaire Tries Again to Hijack Veterans' Care

Hedge fund giant Steven Cohen's first effort to accelerate mental health care privatization failed. His second attempt has begun.

BY RUSSELL LEMLE AND JASPER CRAVEN JANUARY 12, 2026

Another Mass Staffing Purge at the VA

Up to 37,000 positions may be dropped, with the VA transformed into a facilitator for outsourcing, sources tell the Prospect.

BY SUZANNE GORDON AND RUSSELL LEMLE DECEMBER 18, 2025

Prepared Statement of American Academy of Neurology

American Academy of Neurology

201 Chicago Avenue
Minneapolis, MN 55415
Tel: (612) 928–6000
Fax: (612) 454–2746
AAN.com

March 4, 2026

Chairwoman Mariannette Miller-Meeks
House VA Subcommittee on Health
504 Cannon House Office Building
Washington, DC 20515

Ranking Member Julia Brownley
House VA Subcommittee on Health
2262 Rayburn House Office Building
Washington, DC 20515

Dear Chairwoman Miller-Meeks and Ranking Member Brownley,

As President of the American Academy of Neurology, I appreciate the opportunity to provide a statement for the record ahead of the House Veterans' Affairs Subcommittee on Health *"Hidden Wounds: Effectively Supporting Veterans with TBI Injuries"* oversight hearing.

The American Academy of Neurology (AAN) is the world's largest association of neurologists and neuroscience professionals with more than 44,000 members—and the leading voice on brain health. The AAN's mission is to enhance member career fulfillment and promote brain health for all. A neurologist is a doctor who specializes in the diagnosis, care, and treatment of brain, spinal cord, and nervous system diseases. These neurological diseases and disorders affect one in two people in the United States and include Alzheimer's disease, stroke, concussion, epilepsy, Parkinson's disease, multiple sclerosis, peripheral neuropathy, and migraine.

Nine million Veterans are enrolled in VA care around the nation, including many who live with neurologic disease–some of which is associated with their service to our country. With nearly one in four veterans nationwide screening positive for probable traumatic brain injury (TBI)[1], veterans often benefit from the unique care of neurology-related Centers of Excellence, which are fully integrated into a VA medical center to better coordinate multidisciplinary care. Individual neurologic conditions (multiple sclerosis, Parkinson's, headache and epilepsy) have primary centers and consortium sites around the United States. Each of these centers provides state-of-the-art clinical care, educational resources for Veterans and other VA health care providers, and conducts medical research to better detect, diagnose, and treat these disorders.

Congress has played a key role in creating and maintaining these centers over the last two decades as the increasing number of veterans affected by neurologic conditions has increasingly become clear, with studies showing a direct linkage between TBI and the development of subsequential neurological disorders[2]. Post-traumatic epilepsy and post-traumatic headache (PTH) are both considered long-term complications of mild to moderate TBI, with PTH developing in 90% of cases[3]. Through steady annual increases of appropriated funds, we have seen strengthened collaboration between all four centers and coordination of care. Despite this progress, it remains clear that further investment is required for these centers to provide the highest

[1] Traumatic Brain Injury in US Veterans: Prevalence and Associations With Physical, Mental, and Cognitive Health - ScienceDirect
[2] Association of Traumatic Brain Injury with Subsequent Psychiatric and Neurological Conditions: A Meta-Analysis - PMC
[3] Challenges: Veterans and Migraine | American Migraine Foundation

American Academy of Neurology

201 Chicago Avenue
Minneapolis, MN 55415
Tel: (612) 928-6000
Fax: (612) 454-2746
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quality of care for our Veterans and collaborate more closely with one another – rather than diverting funds to community care settings that lack comparable infrastructure and specialized expertise in veteran-specific TBI exposures.

In particular, it is remarkable that the multiple sclerosis and Parkinson's disease centers have not received a significant increase in funding for nearly 20 years despite increases in veterans with these conditions. A 2018 study involving military veterans reported a 56% increase in risk of developing Parkinson's due to mild TBI and an 83% increase in risk for those exposed to moderate or severe TBI.[4] Further, researchers analyzing over 2 million veterans identified that conditions such as TBI were among the strongest clinical predictors of MS emergence seen in post-9/11 veterans[5]. Despite these findings, funding has not significantly increased even after the VA officially recognized Parkinson's disease as being associated with Agent Orange in 2010 and TBI in 2012. Multiple sclerosis is a condition that is presumptively service connected if diagnosed within seven years after separating from service – and the number of diagnosed veterans with MS has more than doubled since these centers were established.

Congressionally appropriated investments allocated to the Neurology Centers of Excellence support the clinical integration across disciplines that is crucial for the comprehensive care that vulnerable Veterans need, support outreach to serve Veterans outside the host facility such as rurally residing Veterans, support shared staff working across the NCP, and assist the related oversight activities of the Neurology Program Office. VA has established a national coordination structure for the Parkinson's and MS Centers of Excellence to match the organization of the Epilepsy and Headache Centers of Excellence.

Integration of the neurology special clinical programs into a unified structure – rather than operating as four separate Centers – has strengthened coordination and streamlined collaboration towards shared goals. The rapid expansion of telehealth has further expanded access to specialized care for Veterans across the country. Teleneurology plays a crucial role in reaching Veterans unable to access in-person services and must be safeguarded to ensure continued delivery of high-quality neurological care. By leveraging shared NCP roles across the Centers, the NCoEs enhance staff efficiency, reduce redundancy, and strategically allocate resources – both personnel and operational – to support high-quality care and optimized program performance.

Early intervention delivered through these Centers is critical to reducing long-term complications from TBI and decreasing the risk of more serious neurologic disorders. The VA Neurology Centers of Excellence provide an indispensable service to America's Veterans living with chronic neurologic conditions. The care delivered at these Centers represents the highest standard of veteran-informed, specialized treatment for those who have sustained TBIs – surpassing what is publicly available through private or nonprofit providers.

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[4] Traumatic Brain Injury and the Development of Parkinsonism: Understanding Pathophysiology, Animal Models, and Therapeutic Targets - PMC

[5] TBI Exposure as a Strong Clinical Predictor for MS Among Veterans

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Minneapolis, MN 55415
Tel: (612) 928-6000
Fax: (612) 454-2746
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We look forward to continuing to work with Congress to secure robust, sustained funding to ensure our nation's Veterans receive the highest quality of neurologic care for years to come.

Thank you for the opportunity to highlight the importance of sustained funding and coordinated support for the VA's Neurology Centers of Excellence, particularly as TBI continues to have lasting physical, cognitive, and behavioral impacts across the veteran community. If you have any additional questions, please do not hesitate to contact Hanna Ahmaripour, Senior Congressional Affairs Manager, at hahmaripour@aan.com.

Sincerely,

Natalia S. Rost, MD, MPH, FAAN, FAHA
President, American Academy of Neurology

Document for the Record Submitted by Greg Murphy

frontiers in Neuroscience

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The use of hyperbaric oxygen for veterans with PTSD: basic physiology and current available clinical data

Keren Doenyas-Barak [1,2,*], Ilan Kutz [1], Erez Lang [1,2], Rachel Merzbach [1,3], Rachel Lev Wiesel [1,4], Rahav Boussi-Gross [1], Shai Efrati [1,2]

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Abstract

Post-traumatic stress disorder (PTSD) affects up to 30% of veterans returning from the combat zone. Unfortunately, a substantial proportion of them do not remit with the current available treatments and thus continue to experience long-term social, behavioral, and occupational dysfunction. Accumulating data implies that the long-standing unremitting symptoms are related to changes in brain activity and structure, mainly disruption in the frontolimbic circuit. Hence, repair of brain structure and restoration of function could be a potential aim of effective treatment. Hyperbaric oxygen therapy (HBOT) has been effective in treating disruptions of brain structure and functions such as stroke, traumatic brain injury, and fibromyalgia even years after the acute insult. These favorable HBOT brain effects may be related to recent protocols that emphasize frequent fluctuations in oxygen concentrations, which in turn contribute to gene expression alterations and metabolic changes that induce neuronal stem cell proliferation, mitochondrial multiplication, angiogenesis, and regulation of the inflammatory cascade. Recently, clinical findings have also demonstrated the beneficial effect of HBOT on veterans with treatment-

resistant PTSD. Moderation of intrusive symptoms, avoidance, mood and cognitive symptoms, and hyperarousal were correlated with improved brain function and with diffusion tensor imaging-defined structural changes. This article reviews the current data on the regenerative biological effects of HBOT, and the ongoing research of its use for veterans with PTSD.

Keywords: post-traumatic stress disorder, hyperbaric oxygen therapy, treatment-resistant PTSD, combat-associated PTSD, neuroplasticity

Introduction

Epidemiological studies have consistently revealed high prevalences of combat-associated post-traumatic stress disorder (PTSD) among military personnel and veterans, affecting up to 30% of those with a history of combat involvement (Marmar et al., 2015). Rates of PTSD vary, depending on the specific conflict, as well as the duration and intensity of combat exposure (Hoge et al., 2008; Jankowsi, 2016). Furthermore, increased risks have been reported among persons with physical injuries (Hoge et al., 2008). Combat-associated PTSD substantially impacts not only the mental and physical health of individuals but also their social functioning and overall quality of life.

The primary treatment options for PTSD typically involve psychological therapies and pharmacotherapy. Most guidelines recommend trauma-focused cognitive-behavioral therapy or pharmacotherapy based on the clients' preferences (Martin et al., 2021). However, numerous studies have demonstrated only marginal superiority of these treatments compared to control conditions (Steenkamp et al., 2015), and also low tolerability and high dropout rates (Hembree et al., 2003; Imel et al., 2013). Moreover, real-world clinical settings have shown even lower effectiveness and response rates (Nathan et al., 2000; Hengartner, 2018). To gain insights into the effectiveness of PTSD therapies in real-life situations, the Israel Defense Forces Unit for Treatment of Combat-Related PTSD has collected data on treatment outcomes. A retrospective analysis of 709 veterans seeking treatment revealed that only 39% experienced significant clinical improvement; and the rate of remission for intrusion symptoms was only 16% (Levi et al., 2022). Together with other studies, this suggests that combat veterans present particular challenges in treatment response (Van der Kolk, 1994).

Treatment resistance in veterans with PTSD may be explained by functional and structural brain changes, as evidenced by imaging studies, particularly within the frontolimbic circuitry (Yehuda et al., 2015). Such brain impairments underscore the potential benefit of biological treatments.

In 2018, the VA Evidence-Based Synthesis Program for traumatic brain injury (TBI) and/or PTSD stated that based on the data available up to 2018, it was difficult to make clear decisions regarding the use of HBOT for TBI and PTSD (Peterson et al., 2018). However, since 2018 preclinical as well as clinical data accumulated (Deru et al., 2018; Lin et al., 2019; Lippert and Borlongan, 2019; Mozayeni et al., 2019; Harch et al., 2020; Doenyas-Barak et al., 2022, 2023; Hadanny et al., 2022; MacLaughlin et al., 2023) and contributed to our understanding of the potential role of HBOT in PTSD treatment.

Pathophysiology and long-term consequences of trauma

Accumulating evidence suggests that the pathophysiological changes occurring during an acute traumatic event can lead to long-term alterations in the structure and function of the brain. The neurobiological cascade begins with an unbalanced surge of stress hormones, characterized by a low ratio of cortisol to catecholamine levels (Yehuda, 2002; Charney, 2004; Pitman et al., 2012). Notable in the early stages following the traumatic event changes in brain perfusion and metabolism can be observed (Lucey et al., 1997; Bonne et al., 2003; Zhe et al., 2016; Ben-Zion et al., 2020). Subsequent long-term changes primarily affect the prefrontal cortex and the limbic system (Yehuda et al., 2015) and correlate with reported clinical symptoms.

Studies have identified abnormalities in the medial prefrontal cortex and the anterior cingulate cortex. Both these regions, when impaired, have been associated with deficits in emotional regulation and can serve as predictors of post-traumatic symptom severity (Zhe et al., 2016). Furthermore, impaired connectivity, both functional and structural, between the amygdala, the hippocampus, and the frontal lobes have been demonstrated (Mueller et al., 2015). These findings support the notion that dysfunction within the frontolimbic circuitry contributes to the difficulty experienced by individuals with PTSD in integrating cognitive control over the emotional neural system.

In addition to alterations in brain metabolism and activity, traumatic exposure has been linked to reduced hippocampal volume, while preserved hippocampal volume has been associated with better response to certain treatments (Admon et al., 2013).

Hyperbaric oxygen therapy

Hyperbaric oxygen therapy (HBOT) involves the inhalation of 100% oxygen at pressures exceeding 1 atmosphere absolute (ATA). This enhances the amount of oxygen dissolved in the plasma and

subsequently the body tissues (Fosen and Thom, 2014). In the blood, oxygen is carried in two forms: a fraction that is bound to hemoglobin and a free fraction dissolved in the plasma. At physiologic normoxic conditions, i.e., at a normal concentration of inspired oxygen (20.8%), at 1 ATA, up to 99% of the oxygen is carried by hemoglobin, while the fraction of oxygen dissolved in the plasma is small (Collins et al., 2015). However, according to Henry's law (Trayhurn, 2019), at an elevated pressure (such as breathing pure oxygen under hyperbaric exposure), the dissolved amount can become significant. At the cellular level, the oxygen pressure delivered to the mitochondria at 1 ATA is 1–4 mmHg; while in a hyperbaric environment of 2 ATA with 100% oxygen, the pressure may increase by as much as 15-fold (Hadanny and Efrati, 2020). While many beneficial effects of HBOT can be attributed to the steep rise in tissue oxygenation, it is now understood that the fluctuation in the combined action of hyperoxia and hyperbaric pressure triggers both oxygen and pressure-sensitive mechanisms.

One of the most powerful inducers of regenerative processes is low oxygen, or hypoxia (Steenkamp et al., 2015). Interestingly, at the cellular level, it is fluctuations of oxygen concentration and not the absolute values that are sensed. The implication is that by repeating intermittent fluctuations of oxygen, from high oxygen pressures back to normal pressures, the cellular response is that of "relative hypoxia" which in turn, induces the regenerative effects of hypoxia. This is described as the "hyperoxic-hypoxic paradox" (Hadanny and Efrati, 2020). This paradox induces a number of physiological effects. These include: improved mitochondrial function, multiplication, and migration; induction of the hypoxic induced factor (HIF); neuronal stem cell proliferation; production of vascular endothelial growth factor (VEGF); and an anti-inflammatory effect. Each of these is described below.

Improved mitochondrial function, multiplication, and migration

At the cellular level, 80% of the available oxygen is used by the mitochondria. The low oxygen level in this organelle renders it a key oxygen sensor and an important signaler (Palmeira et al., 2019). The effects of HBOT on mitochondrial function and multiplication were demonstrated in several studies. In a training mice model, HBOT facilitated mitochondrial oxidative and glycolytic capacities and increased the expression of proteins involved in mitochondrial biogenesis (Suzuki, 2017). Similar effects were demonstrated among middle-aged athletes who were treated by HBOT; the mitochondrial mass and the related maximal oxygen phosphorylation capacity increased (Hadanny et al., 2022). Other studies highlights the importance of mitochondrial function for proper maintenance of neuronal function. One of the established mechanisms is related to cell–cell signaling via the transfer of mitochondria between astrocytes and neurons (Davis et al., 2014; Hayakawa et al., 2016). Neurons can release and transfer damaged mitochondria to astrocytes for

disposal and recycling (Davis et al., 2014), and astrocytes can release functional mitochondria that enter into neurons (Hayakawa et al., 2016). HBOT facilitates these mechanisms, and contributes to neuron resilience to inflammatory insults (Palzur et al., 2008; Lippert and Borlongan, 2019) and to recovery at the chronic delayed stage of various types of brain injuries (Palzur et al., 2008; Lippert and Borlongan, 2019).

Hypoxic induced factor

Hypoxic induced factor is a transcription factor that responds to changes in cellular oxygen supply (Hellwig-Bürgel et al., 2005). In normoxic conditions, HIF is degraded by hydroxylation, in a process that is regulated by the ratio of reactive oxygen species (ROS) to scavenging activity. During hyperoxia, increased oxygen availability enhances ROS production, but also the production of ROS scavengers, including glutathione peroxidase and superoxide dismutase. Upon return to normoxia, the level of scavengers is increased, according to their inherent elimination half-life, which is significantly longer than the ROS half-life. This results in a low ratio of ROS/scavenging capacity, a state similar to that of the hypoxic state, with increased HIF expression due to suppressed HIF hydroxylation. The effect of repeated intermittent hyperoxia by HBOT on HIF expression was demonstrated in a number of animal models, and in various types of organs and cells (Salhanick et al., 2006; Ren et al., 2008; Hu et al., 2014). Increased HIF expression is neuroprotective and enhances regenerative effects in post-stroke and spinal cord injuries (Angels Font et al., 2010). HIF activation was shown to have a direct effect on hippocampal activity and on hippocampal based memory performance (Adamcio et al., 2010; Xing and Lu, 2016).

Neuronal stem cell proliferation

Hyperbaric oxygen therapy has been shown to induce the proliferation and mobilization of hematopoietic and mesenchymal stem cells (Milovanova et al., 2009; Thom et al., 2011; Heyboer et al., 2014; Yang et al., 2017), as well as of neuronal stem cells in the hippocampus and the periventricular region (Wang et al., 2007; Yang et al., 2008; Zhang et al., 2010). This effect contributes to regeneration following stroke, TBI, and vascular dementia (Zhang et al., 2010; Lee et al., 2013; Yang et al., 2017), and is facilitated by the elevation of stem cell factors that promote stem cell proliferation (Thom et al., 2006) and stabilization of cAMP responsive element binding protein (Mu et al., 2013).

Vascular endothelial growth factor production

Vascular endothelial growth factor production is triggered by HIF-1, and in turn activates vascular cells to initiate angiogenesis and arteriogenesis. Angiogenesis is the budding of new capillaries from existing vessels. Arteriogenesis is the remodeling of collateral blood vessels that handle the increased flow, bypassing stenotic regions of the original conduit arteries (Van Weel et al., 2008; Semenza, 2011). VEGF also induces vasodilatation activity, as well as microvascular permeability, which is needed for immediate improvement of tissue ischemia (Semenza, 2011). VEGF was shown to contribute to improved hippocampal activity and neurogenesis (Hassouna et al., 2016).

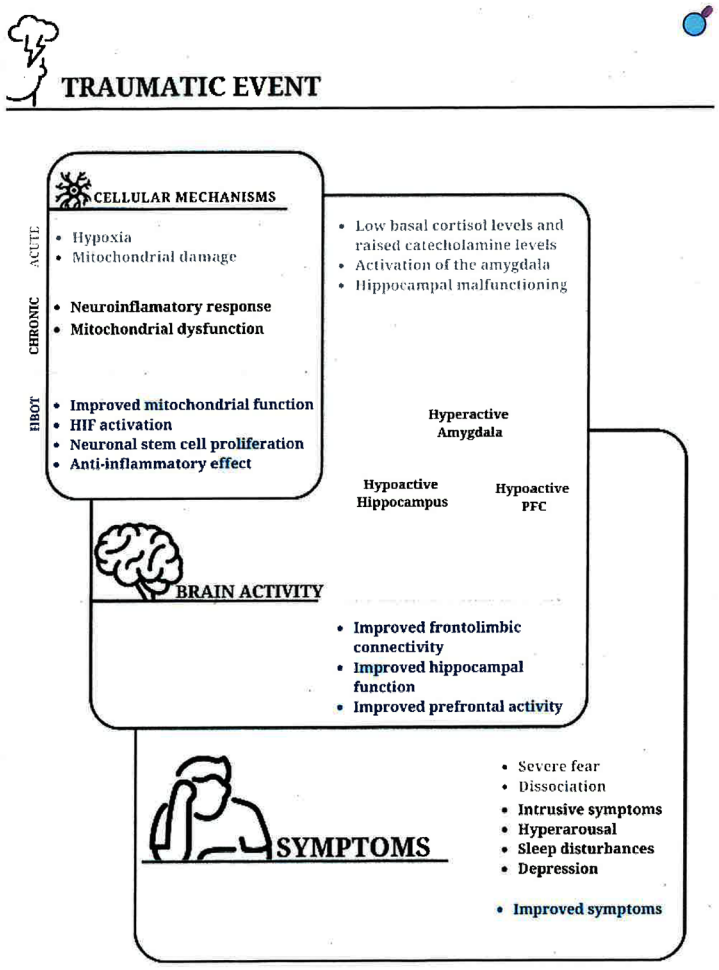
Anti-inflammatory effect

Hyperbaric oxygen therapy reduces inflammatory reactions (Vlodavsky et al., 2006), attenuates microgliosis and astrogliosis reactions (Lim et al., 2013; Lavrnja et al., 2015), and promotes blood–brain barrier integrity.

The cellular mechanisms mentioned above contribute to improved cerebral integrity and plasticity. Examples include regeneration of axonal white matter, angiogenesis, improvement in global cerebral blood flow, and increased brain metabolism. Accordingly, HBOT has been shown to improve the maturation, myelination (Haapaniemi et al., 1998; Vilela et al., 2008; Chang et al., 2009), and stimulation of axonal growth, thus enhancing the functioning and communication of neurons (Mukoyama et al., 1975; Bradshaw et al., 1996). In addition, HBOT initiates and facilitates angiogenesis, which also contributes to axonal regeneration (Kuffler, 2011; Lin et al., 2012; Duan et al., 2014; Peng et al., 2014). HBOT improves regional cerebral vascular flow, which is necessary for neurogenesis and synaptogenesis (Chen et al., 2003; Jiang et al., 2005; Tal et al., 2015). In addition to increased regional cerebral blood flow by angiogenesis, HBOT improves global cerebral vascular flow (Neubauer and James, 1998; Rockswold et al., 2001, 2007; Zhou et al., 2007). Due to increased blood flow and oxygenation, brain metabolism increases significantly, as seen in positron emission tomography (PET) and single photon emission computed tomography (SPECT) scans (Boussi-Gross et al., 2013).

Long-lasting hibernating brain regions are commonly demonstrated in various types of brain injury, such as following concussion and stroke. HBOT targets the baseline pathophysiology that is responsible for unrecovered brain tissue (Efrati and Ben-Jacob, 2014), and induces cerebral plasticity and repair of chronically impaired brain functions. This improves the quality of life of individuals after stroke or prolonged post-concussion syndrome (PCS), even years after the acute event (Boussi-Gross et al., 2013; Efrati et al., 2013; Tal et al., 2015; Yan et al., 2015; Harch et al., 2017; Hadanny et al., 2018a; see Figure 1).

FIGURE 1.


TRAUMATIC EVENT
CELLULAR MECHANISMS
ACUTE
• Hypoxia
• Mitochondrial damage
CHRONIC
• Neuroinflamatory response
• Mitochondrial dysfunction
HBOT
• Improved mitochondrial function
• HIF activation
• Neuronal stem cell proliferation
• Anti-inflammatory effect
• Low basal cortisol levels and raised catecholamine levels
• Activation of the amygdala
• Hippocampal malfunctioning
Hyperactive Amygdala
Hypoactive Hippocampus
Hypoactive PFC
BRAIN ACTIVITY
• Improved frontolimbic connectivity
• Improved hippocampal function
• Improved prefrontal activity
SYMPTOMS
• Severe fear
• Dissociation
• Intrusive symptoms
• Hyperarousal
• Sleep disturbances
• Depression
• Improved symptoms

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The impact of traumatic events on cellular mechanisms, brain activity, and PTSD symptoms; and the potential benefits of hyperbaric oxygen therapy. Acute stress-inducing events can lead to cellular hypoxia, and widespread mitochondrial damage. The acute event is followed by a neuroinflammatory response and long-lasting mitochondrial dysfunction. An imbalance is commonly observed between the surge of catecholamines and cortisol levels. This contributes to activation of the basolateral amygdala and reduced perfusion to the hippocampus. Subsequently, the hyperactive amygdala, together with reduced activity in the prefrontal cortex and hippocampus, in addition to diminished frontolimbic connectivity, contribute to difficulties in integrating traumatic memories. From a clinical perspective, events that trigger post-traumatic symptoms result in a perceived overwhelming threat and often peritraumatic amnesia, which is presumably associated with hippocampal malfunction. The incomplete acquisition of traumatic memories may contribute to their intrusive nature at a later time. Hyperbaric oxygen therapy (HBOT) has been shown to enhance mitochondrial function and signaling. Additionally, fluctuations in cellular oxygen levels lead to increased hypoxia-inducible factor (HIF) levels. These, in turn, contribute to the activation of genes involved in the repair process. This therapy also promotes stem cell proliferation in various tissues, including neuronal stem cells in the brain. The enhanced activity and connectivity of the prefrontal cortex play a role in achieving better frontolimbic balance. This potentially explains the improvement in hyperarousal symptoms. Furthermore, the improved function of the hippocampus may facilitate the retrieval of inaccessible memories, aid in the processing of traumatic memories, and reduce intrusive symptoms. PFC, prefrontal cortex.

An evidence-based review of the use of HBOT for veterans with PTSD

The effect of HBOT on the post-traumatic response has been studied extensively in preclinical and clinical trials (Table 1). Several preclinical studies using animal models have demonstrated the salutary effects of HBOT on anxiety-related behavior, neuronal plasticity, neurogenesis, and angiogenesis (Peng et al., 2010; Lin et al., 2019; Fedida et al., in press). HBOT was shown to increase the expression of brain-derived neurotrophic factor and laminin, markers associated with neuronal plasticity and improved dendrite morphology in the hippocampus. HBOT also attenuated the fear response and anxiety-like behavior induced by traumatic stress exposure.

TABLE 1.

Summary of clinical trials.

References	*N* with PTSD/*N* total	TBI comorbidity	Military	ATA	Number of sessions	Session length (min)	Placebo	Ima
Doenyas-Barak et al., 2022 (controlled trial)	35/35	None	+	2 ATA	60	90	NA	M
Harch et al., 2020 (controlled single blind)	?/63	100%	No	1.5 ATA	40	60	NA	N
Mozayeni et al., 2019	7	100%	Some	1.5 ATA	40–80	45	NA	N
Hadanny et al., 2018b	30	None	None	2 ATA	60	90	NA	SP a M
Deru et al., 2018 (randomized controlled trial, BIMA study)	18	100%	+	1.5 ATA	40	60	1.2 ATA	N

References	*N* with PTSD/*N* total	TBI comorbidity	Military	ATA	Number of sessions	Session length (min)	Placebo	Im
Harch et al., 2017 (case-control study)	10/29	100%	+	1.5 ATA	40	60	NA	SP
Miller et al., 2015 (multicenter, double-blind, sham-controlled clinical trial, HOPPS trial)	47/72	100%	+	1.5 ATA	40	60	1.2 ATA or standard care	N
Cifu et al., 2014 (double-blind, randomized, controlled trial)	?/50	100%	+	2 ATA	40	60	10% O_2 at 2 ATA (equivalent to room air) or 75% O_2 at 2 ATA (equivalent to 1.5 ATA)	N
Harch et al., 2012 (safety study)	15/16	100%	+	1.5 ATA	40	60	NA	SP

References	*N* with PTSD/*N* total	TBI comorbidity	Military	ATA	Number of sessions	Session length (min)	Placebo	Im
Wolf et al., 2012 (single-center, double-blind, randomized, sham-controlled, prospective trial)	?/60	100%	+	2.4 ATA	30	90	1.3 ATA	N
Harch et al., 2009 (case report)	1/1	100%	+	1.5	39	60	NA	SP
Eovaldi and Zanetti, 2010 (case report)	1/1 (acute stress response)	100%	–	2.4 ATA	7	90	NA	N

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TBI, traumatic brain injury; ATA, atmosphere absolute; NA, not applicable; PCL, PTSD Checklist; SPECT, single photon emission tomography; CAPS-5, Clinician-Administered PTSD Scale for DSM-5PSS-I, the post-traumatic symptom scale interview.

Early clinical evidence for the potential use of HBOT in humans with PTSD came from case reports. These described significant improvements in PCS and PTSD symptoms following HBOT (Harch et al., 2009; Eovaldi and Zanetti, 2010). A number of pilot studies involving military

personnel with prolonged PCS or TBI were conducted after the publication of these case reports, and demonstrated significant improvements in PTSD symptoms after HBOT sessions (Neubauer and James, 1998; Rockswold et al., 2007).

A pilot trial by Harch et al. (2012) included 16 military persons with prolonged PCS due to mild-moderate TBI or blast injury. Fifteen of them were also diagnosed with PTSD. Forty 60-min HBOT sessions of 1.5 ATA were prescribed. Following HBOT, PTSD symptoms improved significantly, as reflected by the decrease in the mean PTSD Checklist-Military (PCL-M), from 67.4 ± 10.5 to 47.1 ± 16 ($P < 0.001$).

A single-center, double-blind, randomized, sham-controlled, randomized is always prospective trial (Wolf et al., 2012) at the U.S. Air Force School of Aerospace Medicine evaluated the effect of 2.4 ATA HBOT vs. room air at 1.3 ATA (prescribed as sham) on post-concussion and post-traumatic symptoms. Fifty military service members with a history of TBI and post-concussion symptoms received 30 sessions of one of the treatments over an 8-week period. Post-traumatic symptoms were evaluated using PCL-M. The article does not mention the number of participants who were diagnosed with PTSD. However, following both the 2.4 ATA and 1.3 ATA protocols, PCL-M improved significantly. Cognitive scores and post-concussion symptoms also improved in both groups.

Miller et al. (2015) recruited 72 veterans with PCS to a multicenter, double-blind, sham-controlled clinical trial. The participants were randomized 1:1:1 to 40 HBOT sessions administered at 1.5 ATA with 100% oxygen, 40 HBOT sessions administered at 1.2 ATA with room air, or no supplemental chamber procedures (standard care). At baseline, 66% of the participants met the criteria for PTSD. Following the intervention, the PTSD symptoms improved in the two active arms (the mean changes of PTSD Checklist score were 11.4; 95% CI, 5.9 to 16.9 and 5.0; 95% CI, −1.7 to 11.6, respectively).

Notably, the use of a hyperbaric environment as a sham treatment aims to enable blinding of group allocation in HBOT trials. However, even a slight increase in oxygen and/or pressure can have meaningful physiological effects, that invalidate the sham condition as a true placebo control. It is well known that any increase in atmospheric pressure, even without changing the concentration, increases gas solubility (Henry's law). For example, 1.05 ATA, the pressure at the Dead Sea, Israel (−436 m below sea-level), can yield significant physiological effects (Kramer et al., 1998; Abinader et al., 1999). Furthermore, among healthy volunteers, stem cell progenitors were shown to increase by threefold following 10 sessions of 1.2 ATA with 21% oxygen (MacLaughlin et al., 2023). Thus, improvement beyond expectation following sham treatment in a hyperbaric environment suggests

that such condition is mistakenly regarded as sham. Accordingly, 1.3 ATA may well serve as a low dosage active treatment rather than as a sham control. Several studies addressed this issue by utilizing alternative methods to provide a placebo-like control condition (Hadanny et al., 2022; Zilberman-Itskovich et al., 2022).

Cifu et al. (2014) recruited 61 veterans with PCS to a double-blind controlled study in which 40 sessions of 2 ATA HBOT were prescribed with 10, 75, or 100% oxygen. The different protocols aimed to enable participants blinding to the group allocation and to serve as equivalents to the common 1.5 ATA 100% protocol, the 2 ATA protocol, and to room air. While PCS did not improve significantly in any of the groups, the PCL-M score decreased from 49.4 at baseline to 42.6 ($P < 0.05$) after treatment in the 2 ATA 100% oxygen group.

In another prospective case-control study, Harch et al. (2017) recruited 30 active service members or veterans with PCS, with or without PTSD. Upon recruitment, 10 of them had symptoms that correlated with the diagnosis of PTSD. After 40, 60-min HBOT sessions, PTSD symptoms improved, as reflected by a decrease in PCL-M, from 63.4 + 15.9 to 46.8 + 16.5 ($P < 0.001$). Continued symptom improvement was observed at 6 months follow-up.

In a retrospective study, Mozayeni et al. (2019) evaluated the effect of 40–82 1.5 ATA HBOT sessions, on neurocognitive test measures, among 32 persons with PCS due to mild TBI. Seven persons (22%) had a diagnosis of PTSD in addition to post-concussive symptoms. Compared to the patients without PTSD, those with a diagnosis of PTSD showed more improvement in fatigue and mood scales (mean change = −23.8 ± 25.1, CI: −32.9 to −14.7, $P = 0.012$), and in neurocognitive test scores (mean change = 13 ± 31, CI: 2–25, $P = 0.028$). Notably, a longer HBOT course was associated with better treatment response.

BIMA (Deru et al., 2018) was another randomized, double-blind, sham-controlled trial of HBOT, for military personnel with post-concussive symptoms, 3 months to 5 years after mild TBI. Forty daily 1-h sessions were provided, with either 100% oxygen at 1.5 ATA or air at 1.2 ATA. Seventy-one patients were randomized, of whom 35 had PTSD. At 13 weeks, the participants who received HBOT showed improvement in post-concussive and PTSD symptoms, sleep quality, control of anger, and memory outcomes, compared to the sham group. Some of the improvements demonstrated after HBOT were greater among the participants with PTSD than among participants with only PCS.

Post-traumatic stress disorder was not the primary recruiting criteria in any of the trials described above; rather, recruitment was according to PCS. PCS and PTSD frequently co-occur

(Taylor et al., 2012), as TBI is a strong predictor of PTSD (Chen et al., 2014). Some symptoms of PCS such as fatigue, irritability, sleep disturbances, and concentration difficulties are also common in PTSD. Depression and emotional alterations also frequently occur in both conditions. Thus, differentiating the effect of HBOT on PCS from the effect on PTSD may be challenging.

The first randomized controlled study (Doenyas-Barak et al., 2022) that aimed to evaluate the effect of HBOT on veterans with combat-related PTSD without TBI was published in 2022. The study included veterans who were diagnosed with combat-associated PTSD according to the Israeli Ministry of Defense criteria, and who failed to improve after at least one line of psychological, and or pharmacological treatment. In addition to meeting Ministry of Defense criteria, each participant was evaluated at the time of recruitment by a psychiatrist with expertise in the field of trauma, who validated the diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) criteria. Individuals were excluded from the trial if they had a history of TBI, or any other brain pathology.

Thirty-five veterans were randomized to HBOT (N = 18) or control (n = 17) groups; of them, 14 and 15, respectively, completed the protocol. Following HBOT, clinical symptoms improved significantly, according to the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) inventory, while no change was demonstrated in the control group. Improved brain activity was seen in functional MRI in the left dorsolateral prefrontal, middle temporal gyri, both thalami, left hippocampus, and left insula. The DTI showed a significant increase in fractional anisotropy in the fronto-limbic tracts, genu of the corpus callosum, and fornix.

Long-term follow-up (Doenyas-Barak et al., 2023), performed 704 ± 230 days after completion of the HBOT course, demonstrated persistence of the treatment results. The mean CAPS-5 score (26.6 ± 14.4) was significantly lower than at the pre-HBOT evaluation, 47.5 ± 13.1, $P < 0.001$; and not statistically different from the short-term post-HBOT evaluation, 28.6 ± 16.7, $P = 0.745$. Moreover, for the CAPS-5 subcategory D (cognition and mood symptoms), the mean score was significantly lower at the long-term than short-term evaluation, 7.6 ± 5.1 vs. 10.0 ± 6.0, $P < 0.001$. At the long-term compared to the pre-treatment evaluation, higher percentages of the participants were living with life partners [77% (n = 17) vs. 46% (n = 10), $P = 0.011$] and were working [73% (n = 16) vs. 41% (n = 9), $P = 0.033$]. Improvements in long-term follow-up were also consistent with medication use; markedly, the number of benzodiazepine users decreased, from 10 (46%) to 4 (18%) ($P = 0.07$), and the median medically prescribed cannabis dose decreased from a monthly 40.0 g (0–50) to 22.5 g (0–30) per month ($P = 0.046$). The long-term beneficial effect, more than 2 years after the last HBOT session, further supported the regenerative effect of HBOT. Unlike pharmacotherapy, which obligates permanent administration, or intensive psychotherapy, whose

effects do not persist after treatment cessation (Jaycox and Foa, 1996; Hertzberg et al., 2002; Rapaport et al., 2002; Davidson, 2004), the biological benefit of HBOT persisted for years. These results suggest that the regenerative effects induced by HBOT promote lasting tissue repair and a new biological equilibrium.

As HBOT obligates daily arrival at the hyperbaric center, and the expectation from the treatment is high, a potential placebo effect should be considered. Thus, a second, placebo-controlled trial with similar combat-related PTSD population is currently being conducted by the Sagol center research group. To annul hyperbaric conditions, but provide pressure sensation to the ears, the pressure in the placebo condition is increased to 1.1 ATA during the first 5 min of the session, with hissing noise of circulating air. The pressure is then decreased slowly during the next half hour, to 1.0 ATA, with an oxygen level of 21%. Positive outcomes of this study may contribute to validation of the effect of HBOT on PTSD.

HBOT for PTSD induced by childhood sexual abuse

An effect of HBOT was suggested among individuals with PTSD induced by childhood sexual abuse. A prospective randomized controlled clinical trial by Hadanny et al. (2018b) included 30 women with fibromyalgia and a history of childhood sexual abuse. Following 60 HBOT sessions at 2 ATA, entailing 100% oxygen for 90 min with 5-min air breaks every 20 min, significant improvement was observed in fibromyalgia- and PTSD-related symptoms. PTSD-related symptoms, such as somatization, depression, and anxiety were correlated with improvements in metabolic brain activity, as assessed by brain SPECT.

Adverse effects

Hyperbaric oxygen therapy is generally safe and well tolerated. The vast majority of side effects are mild and reversible (Camporesi and Bosco, 2014). Middle ear barotrauma is the most common side effect of hyperbaric oxygen, with an incidence of about 2% (Camporesi and Bosco, 2014), and a slightly higher frequency among those who undergo multiple treatments (Bessereau et al., 2010). Sinus barotrauma is another reversible common complication of hyperbaric oxygen, and usually presents in patients with upper respiratory tract infections or allergic rhinitis (Camporesi and Bosco, 2014).

Some patients present with reversible myopia due to direct oxygen toxicity to the lens. While its etiology is unclear, it usually resolves within days to weeks after the last treatment (Camporesi

and Bosco, 2014).

Pulmonary barotrauma is an unusual side effect of HBOT, provided that pneumothorax was excluded before initiating HBO therapy (Leach et al., 1998). Other pulmonary adverse effects such as pulmonary edema, chest tightness, and cough have rarely been reported in conjunction with HBOT (Fan et al., 2017).

Seizures due to central nervous system oxygen toxicity are a rare but dramatic consequence of HBOT (Hadanny et al., 2016; Manning, 2016). Patients receiving glucocorticoids, insulin, thyroid replacement, and sympathomimetic medications may be at higher risk of oxygen toxicity of the central nervous system.

Hyperbaric oxygen therapy has also been associated with hypoglycemia in some individuals with diabetes (Roth and Weiss, 1994). A retrospective analysis reported adverse events among 406 (17.4%) of 2,334 patients who underwent an HBOT course; the overall incidence was 721:100,000 events per session (0.72%) (Hadanny et al., 2016). Subjective symptoms of barotraumas [otalgia (Hadanny et al., 2016), sinus pain] were reported by 79 (3.4%) individuals, while 215 (0.36%) had objective signs of middle ear barotrauma per otoscopy and 16 (0.02%) had objective sinus barotrauma. Only one individual had a HBOT related seizure. A total of 58 (2.5%) individuals did not complete the prescribed HBOT sessions due to side effects. The main reason for treatment termination was middle ear barotrauma (55%).

Challenges specific to treating PTSD with HBOT

Individuals with PTSD have often reported worsening of symptoms during the HBOT course. Harch et al. (2012) reported temporary worsening of emotional lability, depression, and headache in four of 16 recruited persons. Miller et al. (2015) reported worsening claustrophobia in one person. Among individuals who were recruited to a study on fibromyalgia related to child abuse, fibromyalgia symptoms worsened temporarily, at about the 20th session in most (Hadanny et al., 2018b). As the HBOT course progressed, symptoms resolved in all the patients. By the end of the HBOT treatment, clinical improvement was significant compared to baseline pre-HBOT assessments.

Among persons with fibromyalgia (Efrati et al., 2018), a unique phenomenon of memory recollection was first reported. Similarly, recollection of inaccessible memories was reported in 35.7% of veterans with military-related PTSD (Doenyas-Barak et al., in press). The memories

surfaced mostly during the second month of the treatment; and their recollection was accompanied by temporary worsening of PTSD symptoms, and/or by somatic pain. Most of the reported resurfaced memories were related to traumatic events; nevertheless, it is important to note that changes in access to non-traumatic memories cannot be ruled out. Furthermore, in the majority of cases, the accuracy of these resurfaced memories could not be verified. While memory recollection and the accompanied distress may be considered adverse effects of the treatment, they may also represent an "on target" effect that contributes to hippocampal-based memory processing in individuals with PTSD.

Rare cases of hypomania associated with HBOT have raised concern regarding the safety of this treatment for individuals with a history of psychosis related to schizophrenia or bipolar disorder (unpublished clinical data). While further research of these issues is currently underway, we exclude persons with co-occurring PTSD and recent or frequent psychosis from HBOT. Further, the potential recollection of inaccessible traumatic memories and the potential for worsening of PTSD-related symptoms during the course of HBOT treatment, emphasizes the need for dedicated professional medical staff with expertise in PTSD and HBOT. Additionally, given that some cases of memory recollection have been reported in patients without a known history of traumatic experiences (Efrati et al., 2018), and considering that bipolar disorder or psychosis can occur in non-traumatized populations, it is important that all medical professionals in each HBOT center be trained in handling such cases.

Discussion

Pre-clinical and clinical trials have shown that HBOT can induce neuroplasticity and improve clinical outcomes of veterans with treatment-resistant PTSD. The biological effects of HBOT include improved mitochondrial function, stem cell proliferation, angiogenesis, and neurogenesis. A number of case reports and 10 clinical trials, including six controlled trials, evaluated the effects of HBOT on PTSD. All those studies indicated positive effects on PTSD symptoms. As detailed above, particular attention should be given to the methods used in the trials, the treatment protocol, the duration of HBOT sessions, and the handling of the control group. In the various studies, treatment pressures ranging from 1.5 ATA to 2.4 ATA were prescribed, demonstrating a high safety profile and significant effects on PTSD symptoms when evaluated shortly after treatment completion. In four of the mentioned trials (Wolf et al., 2012; Cifu et al., 2014; Miller et al., 2015; Deru et al., 2018), the control groups were treated with lower doses of HBOT, which were shown to have some biological effects.

The number of sessions varied among the studies, ranging from 30 to 80 sessions. Although the different protocols were all proven to be safe, the induction of neuroplasticity requires long treatment courses. In our center, we prescribe 60 daily sessions, given 5 days per week. However, the exact minimal effective dosage has not been determined and further research is needed.

Most military-related clinical trials focused on evaluating the effects of HBOT on PCS, whereby PTSD was a common comorbidity and was also assessed. Therefore, the improvements in post-traumatic symptoms observed in these trials may be partially attributed to the alleviation of post-concussion symptoms. Thus far, two clinical trials specifically excluded individuals with a history of physical trauma (Hadanny et al., 2018b; Doenyas-Barak et al., 2022), allowing for a clearer assessment of the effects of HBOT on PTSD symptoms. Both trials demonstrated significant improvement in clinical outcomes.

Taken together, HBOT presents a novel therapeutic approach for PTSD, that targets the biological consequences of traumatic events; by inducing a cascade of salutary physiological alterations that culminate in regenerative neuroplasticity, it offers clinical relief to many who had been suffering from long-term, persistent symptoms of PTSD.

As over many years, HBOT has been used in clinical practice for various indications, such as non-healing peripheral ischemic wound, its safety profile is known. When administered by a trained professional medical team and when using medical standard hyperbaric chambers, HBOT is considered safe and the potential side effects are typically self-remitting. However, certain aspects are specifically relevant for individuals with PTSD, and these need particular attention. During the HBOT treatment course, recollection of traumatic memories may occur. Surfacing of inaccessible memories were reported to occur in 35.7% of individuals with military-related PTSD (Doenyas-Barak et al., in press). The new memories surfaced mostly during the second month of the treatment, and the surfacing was accompanied by temporary worsening of PTSD symptoms. The distress resolved gradually, during the course of a few days, and the memory could be integrated into the participants' narratives. It is highly important that any medical team that treats patients with PTSD by HBOT be aware of this phenomenon and know how to address it. In addition, based on our center's experience, we do not recommend exposure therapy during HBOT sessions. The distress associated with exposure techniques could potentially hinder progress. Instead, we believe that strengthening self-regulatory techniques may contribute to a safer treatment process and support neuroplasticity. Therefore, collaboration with the treating psychologist is necessary to ensure appropriate supplementary treatment.

While preclinical data contribute to our understanding of the potential mechanisms underlying the beneficial effects of HBOT on PTSD, further clinical trials are needed to assess their role in patients with PTSD. The utilization of biomarkers in future trials may help optimize and individualize the HBOT protocol. The relatively new use of functional imaging of the brain, that is being evaluated may also hold promise for individualizing the HBOT protocol per patient pathology. More research and clinical experience are also needed with regard to the accompanying treatments and interventions that may further enhance the clinical benefit gained by HBOT.

Author contributions

KD-B: Conceptualization, Investigation, Writing – original draft. IK: Investigation, Writing – review and editing. EL: Investigation, Writing – review and editing. RM: Writing – review and editing. RL: Writing – review and editing. RB-G: Writing – review and editing. SE: Conceptualization, Supervision, Writing – review and editing.

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Conflict of interest

SE is a shareholder and head the advisory board of AVIV Scientific Ltd. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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