

**Traumatic Brain Injury
Center of Excellence**

**2024
ANNUAL REPORT**

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Letter from the Branch Chief



Katie Stout
Branch Chief

Throughout my time here, I've been inspired by working with colleagues who live the Defense Health Agency mission.



Dear Colleagues and Collaborators,
In July, I had the privilege of becoming branch chief of the Traumatic Brain Injury Center of Excellence. I've been part of this stellar team since 2015, when I accepted the position of section chief of Clinical Affairs. Since then, I have served as acting chief of the organization's two other sections—Research and the Mission Support Office—and, most recently, assistant branch chief under now-retired U.S. Navy Capt. Scott Cota.

Throughout my time here, I've been inspired by working with colleagues who live the Defense Health Agency mission. Everything we at TBICoE do centers on an unrelenting pursuit of excellence in improving the health of service members and building joint-force readiness. To take just one example from 2024: We released the [Warfighter Brain Health Toolkit App](#), putting TBI-related assessments and resources from the DOD, the VA, and the Joint Trauma System at military providers' fingertips—with or without internet access. In the pages that follow, you'll see many more examples of how our work directly impacts warfighter brain health.

If there's one takeaway from 2024, it's that collaboration is a force multiplier. There can be a tendency in some professions to hold things close, sometimes for no other reason than that's how people were trained. But if we want to make real gains in improving the lives of service members, collaboration is critical. TBICoE will continue to look for ways to work closely with our partners on both sides of the operational-to-medical pipeline, much as we did in 2024. (See "[TBICoE 2024 Snapshot](#)" on the next page for a deeper dive on this.)

We expect many of our focus areas in 2024—such as blast exposure, cognitive monitoring, and translating research into clinical practice—to remain the same in 2025. We also stand ready to support directives regarding service member brain health that were outlined in the National Defense Authorization Act for Fiscal Year 2025.

In the meantime, we at TBICoE will keep working hard to push the science of TBI research forward for the warfighter. I invite you to keep reading, to see what this dedicated group did to support the DHA in 2024.

Katie Stout, DPT
Branch Chief
Traumatic Brain Injury Center of Excellence
Research Support Division
Research and Engineering Directorate
Defense Health Agency

TBICoE 2024 Snapshot



As part of an interagency initiative to improve diagnostic criteria for brain injury, we helped develop more precise TBI classification and nomenclature during a workshop sponsored by the National Institute of Neurological Disorders and Stroke.



At the annual AMSUS Society of Federal Health Professionals meeting, U.S. Army Lt. Gen. Telita Crosland, director of the Defense Health Agency, was among the DOD leaders who shared their visions for the future. We came away with new information on how to meet the needs of a changing military environment.



The Brain Injury Awareness Campaign kicked off in March, giving TBICoE more opportunities to raise awareness of the importance of protecting, treating, and optimizing brain health. All sections of TBICoE contribute to this annual effort, as you'll see in this report.



The first Military Health System Conference in 10 years focused on the future of military medicine. The Assistant Secretary of Defense for Health Affairs described the event as a long-overdue family reunion, and we are already looking forward to the next one.



The annual Special Operations Medical Association Scientific Assembly once again featured a brain health track developed by TBICoE staff, who also presented new TBI-related research during the conference. Also in May: The DOD directed that its neurocognitive assessment program transfer from the Army to the DHA. We have been working closely with our Army partners on this transition and with other stakeholders to evaluate cognitive monitoring tools.



The Joint Live Fire event “Piecing Together the TBI Puzzle” was one of many events this year that reinforced the importance of solidifying the operational-to-medical pipeline. Medical providers need to know what to do for service members who have been exposed to blast but don't meet the current diagnostic criteria for injury.



We presented at the Fourth Annual Department of Defense Blast Summit, a three-day event examining the full lifecycle of service-member exposure to blast overpressure and injury.



At the 2024 Military Health System Research Symposium, TBICoE researchers contributed 27 oral and poster presentations. Topics included blast exposure and concussion; virtual reality technology for operational assessments; and caregiver long-term health and quality of life.

TBICoE 2024 Snapshot (Continued)



At the Home Base Brain Health Summit, which brought together government and non-government brain health professionals, we shared input on TBICoE research translation efforts and the way forward for mitigating adverse brain health outcomes.



TBICoE senior research staff, many of whom work at military hospitals and clinics throughout the U.S., traveled to the Silver Spring, Maryland, headquarters for a two-day conference. New this year: Presentations from external organizations, including five other DHA Centers of Excellence. It was an opportunity to highlight our own work and identify potential areas of collaboration.



We continued wrapping up a report to Congress on a 15-year longitudinal study on the effects of TBI on service members and their families. It was the DOD's first large population-based study of its kind, producing many findings that helped advance brain health science both within the DOD and among the wider scientific community. By identifying future areas of research, the study contributed significantly to not only the current state of the science but also the direction of future efforts.



The Uniformed Services University Brain Health Symposium brought together several DHA leaders to share insights about different aspects of warfighter brain health. Our branch chief discussed recent TBICoE research into repetitive blast brain injury, emphasizing the importance of translating research findings into clinical practice so service members get better treatment.



Headquarters staff gathered in April for a retirement party for U.S. Navy Capt. Scott Cota (center), who led TBICoE for three years. Katie Stout (far right) became branch chief on July 1. (TBICoE photo)

Advancing the DHA Mission

As part of the DHA's Research and Engineering directorate, TBICoE aligns priorities to the broader mission of improving health and building readiness. Our work significantly impacts both the clinical and operational communities, as well as other agencies. We join the unrelenting pursuit of excellence by lending subject matter expertise and leadership to both agency-level efforts as well as to collaborations with partners both inside and outside the DOD.

Warfighter Brain Health

Identifying and treating TBI is a critical priority for the DOD. TBICoE has supported, initiated, or completed several major efforts to lead, translate, and advance brain health this year, including:

- **Warfighter Brain Health Provider Toolkit App:** In May, TBICoE released an app that was developed in collaboration with Medical Affairs, DHA's Web and Mobile Technology Program Management Office, and the military service departments. It serves as a one-stop shop for TBI-related assessments and resources available—anytime, anywhere. Military health care providers can access tools such as the [Military Acute Concussion Evaluation 2](#), the [Progressive Return to Activity Clinical Recommendation](#), the [Neurobehavioral Symptom Inventory](#), as well other resources from the DOD, the VA, and the Joint Trauma System. It's one of DHA's latest examples of commitment to implementing new and emerging technology to deliver health care.
- **DOD Warfighter Brain Health Initiative Strategy and Action Plan:** Released in June 2022, the plan aims to synchronize, prioritize, and unify brain-health efforts across the department. Organizations from across the DHA are leading components of the plan, addressing multiple concerns such as blast exposures, repetitive head impacts, and the long-term effects of each. A significant part of the plan involves 36 actions requested by the Joint Requirements Oversight Council; TBICoE initiated or collaborated on 10 of them. Most of these are complete, including seven that were due in January. TBICoE's remaining contributions to this effort will be complete by January 2026.
- **Brain Injury Awareness Campaign:** The annual DHA campaign seeks to increase stakeholder understanding of the signs and symptoms of TBI. Using the theme "Be a Brain Warrior: Protect, Treat, Optimize," we emphasized our role as DOD's TBI Pathway of Care manager with a full slate of activities and products publicizing TBI research, clinical support, and education efforts.



All TBICoE sections support the Brain Injury Awareness Campaign. In 2024, Neuroscience Clinician Joanne Gold from Clinical Affairs conducted a Science Café on the history of headache treatment for the National Museum of Health and Medicine. (TBICoE photo)

DOD TBI Advisory Committee

Since 2014, TBICoE has chaired the DOD’s TBI Advisory Committee, the DOD’s coordinating body chartered to promote and address enterprise-wide coordination of the TBI Pathway of Care for the warfighter. Members of the TAC represent key components of the DOD TBI community, including the Defense Health Agency, U.S. Army, U.S. Marine Corps, U.S. Navy, U.S. Air Force, U.S. Special Operations Command, and the Defense Intrepid Network. In 2024, the TAC met monthly to discuss developments in the field and advise the establishment, standardization, and implementation of evidence-based TBI clinical care, research activities, and training within the DOD. Below are some highlights of the committee’s work.

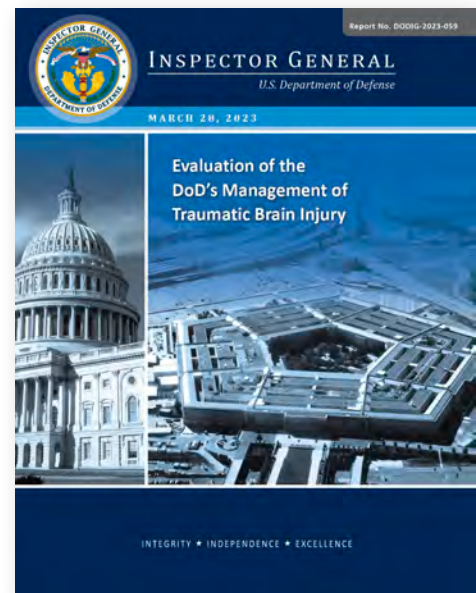
- Reviewed and coordinated responses to the Blast Exposure and Brain Injury Prevention Act
- Advised on changes to Force Health Protection Quality Assurance and Post-Deployment Health Assessments TBI metrics
- Provided feedback on the 15-Year Longitudinal Study Report to Congress
- Reviewed the United States Army Medical Materiel Agency’s findings on objective assessments for TBI

Response to DOD Office of Inspector General Report

In March 2023, the Department of Defense Office of Inspector General published an evaluation of the DOD’s management of TBI that made four recommendations for improvement:

- Update the Defense Health Agency Procedural Instruction 6490.04 to establish a 72-hour follow-up requirement and review the applicability of the Military Acute Concussion Evaluation 2 tool in military hospitals
- Establish a TBI oversight plan for TBI care management
- Establish a TBI Program of Record
- Establish a process for MHS providers to access, create, and update service members’ profiles, regardless of their service component

We have provided input to the Office of the Assistant Secretary of Defense for Health Affairs for the first two recommendations and are substantially supporting responses to the third and fourth, engaging with key stakeholders to accomplish these tasks.



Collaborative Partnerships

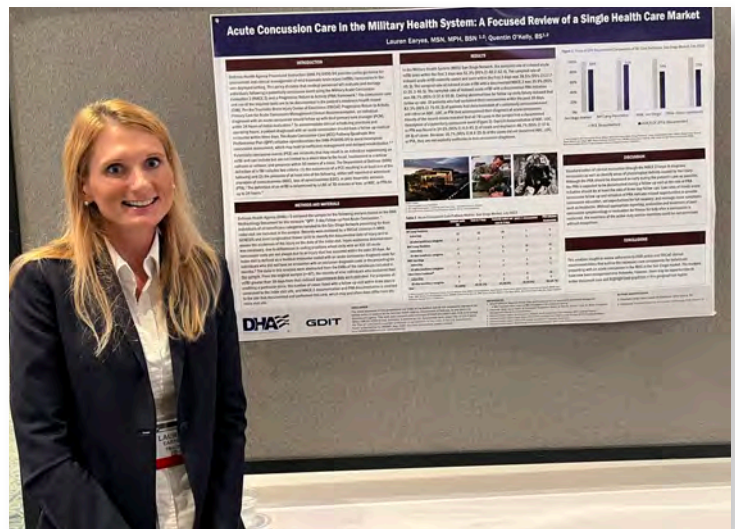
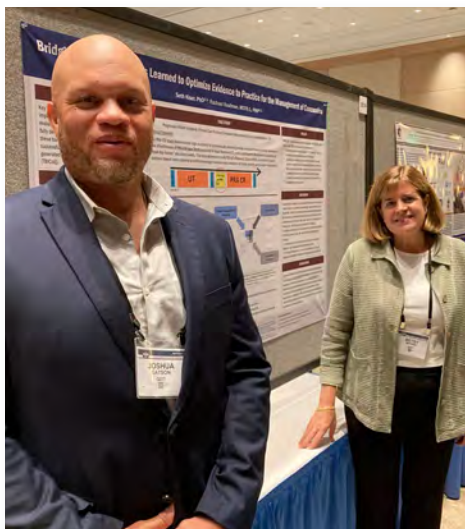
TBICoE continued to build significant working relationships both inside and outside the DOD. We have longstanding partnerships with other DHA Centers of Excellence to jointly address TBI and its impact on mental health, hearing, and vision. Our subject matter experts are regularly invited to brief or join various TBI-related working groups, contributing knowledge to the shared goal of improving the lives of warfighters with TBI and their families and caregivers. Our research, clinical, dissemination, and mission support teams have all developed relationships with various organizations.

Military Health System Research Symposium

The Military Health System Research Symposium is the DOD’s premier health sciences meeting focusing on the unique medical needs of the warfighter, bringing together civilian and military medical care providers, scientists, and professionals in academia and industry. Attendees exchange information on research and health care advancements in areas such as combat casualty care, military operational medicine, and clinical and rehabilitative medicine—all of which dovetail with TBICoE efforts. When MHSRS 2024 convened in August in Kissimmee, Florida, TBICoE was there in force with a total of 6 oral presentations and 21 poster presentations. In addition, TBICoE staff moderated panels on optimizing cognitive performance and advances in diagnosing TBI.



Research Support Cell Chief Stephanie Sloley addresses MHSRS attendees. (TBICoE photo)



From left: Joshua Gatson, Betsy Myhre, and Lauren Earyes stand next to their MHSRS posters. (TBICoE photos)

Research

The TBICoE Research section maintains active research capabilities in military hospitals and clinics to produce hypothesis-driven studies that are clinically and operationally focused, with near- to mid-term applicability for service members. The Research section also identifies knowledge gaps in the scientific literature, responds to congressional mandates for TBI-related studies, and evaluates TBICoE’s clinical tools.

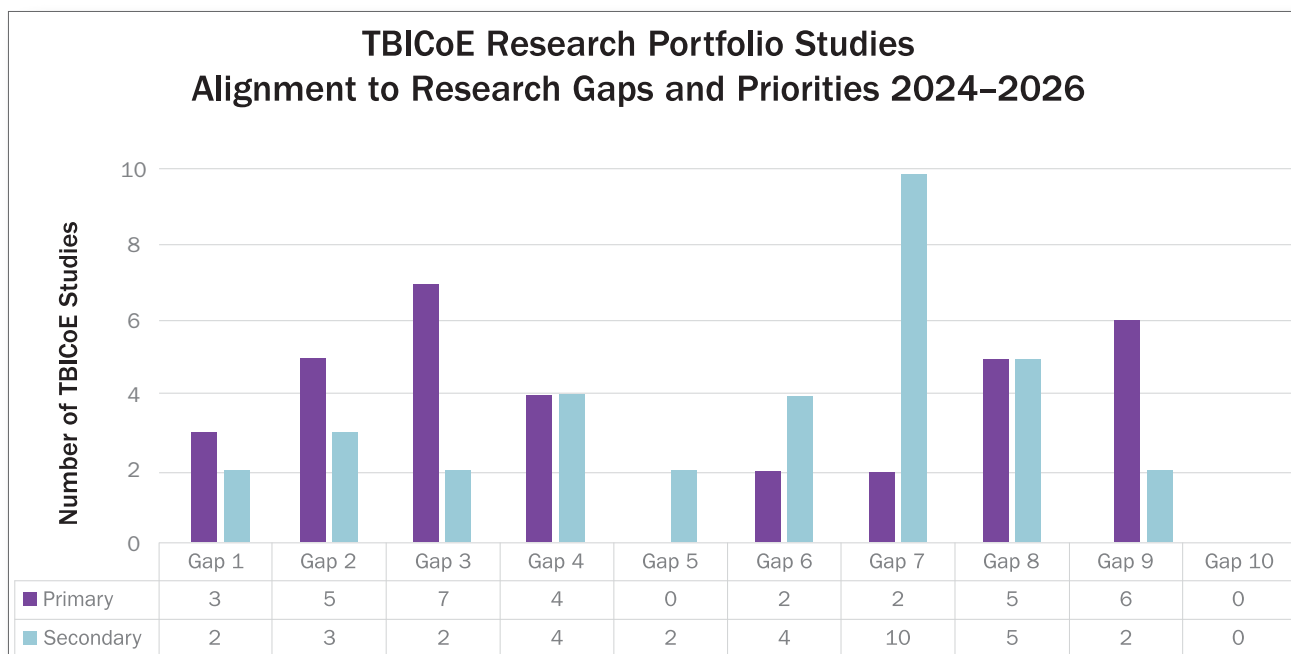


Katie Stout
Research Section Chief (Acting)

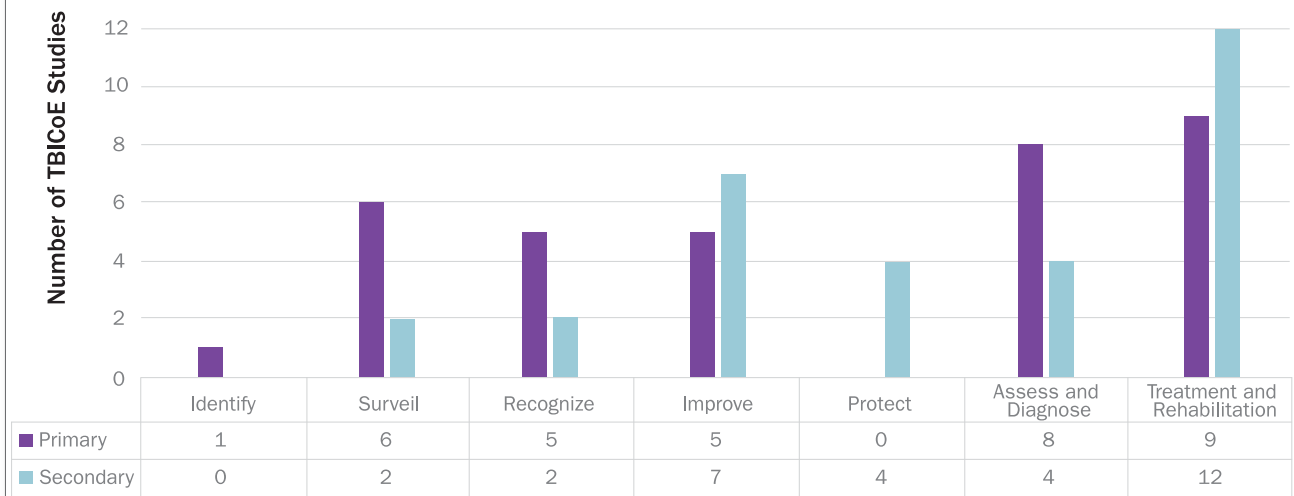
Research Gaps and Priorities

The Research section works to improve outcomes and quality of life for service members and veterans with TBI and to reduce the impact to their caregivers and families. Every two years, to ensure that our research is timely and relevant to MHS and operational needs, we identify 10 research gaps and priorities in TBI care and brain health and adjust our research portfolio accordingly. For our 2024–2026 research gaps, we used 22 source documents (including the three most recent National Defense Authorization Acts) as well as input from several interagency meetings. TBI subject matter experts identified specific research gaps from these sources and drafted the initial gap and priority statements for the next guidance cycle. Internal TBICoE research and clinical SMEs refined the gap and priority statements and external DOD research and clinical partners reviewed the statements to ensure strategic overlap between complementary organizations.

The 34 active studies in the TBICoE research portfolio align to both the new list of gaps and priorities and to the DOD Warfighter Brain Health Initiative sub-capabilities. These sub-capabilities are intended to address and monitor progress regarding larger capabilities, objectives, and lines of effort in the WBH initiative. As the next two figures show, several studies align to more than one area.

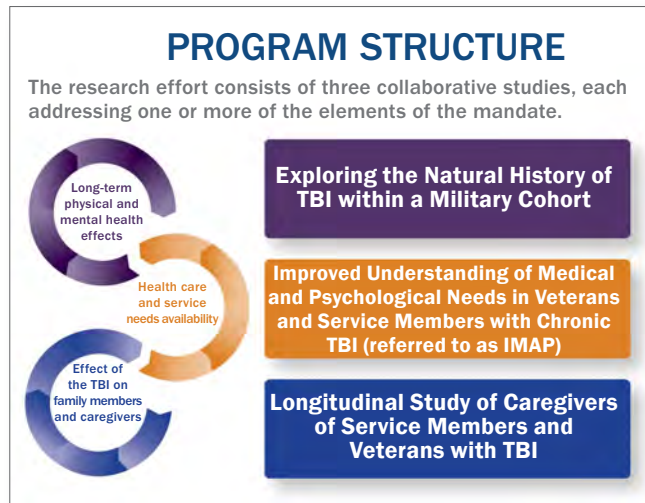


TBICoE Research Portfolio Studies Alignment to Warfighter Brain Health Sub-Capabilities



Longitudinal Studies

In 2007, Congress directed the Secretary of Defense to conduct a [15-year study](#) on the long-term effects of TBI on members of the armed services serving in Operation Iraqi Freedom and Operation Enduring Freedom. The mandate required a study of physical and mental health effects of TBI, health care needs and rehabilitation service availability, and the effects of TBI on family members and caregivers. In 2010, TBICoE (then known as the Defense and Veterans Brain Injury Center, or DVVIC) established the Section 721 Longitudinal Studies of TBI.



To date, study investigators have published 269 peer-reviewed manuscripts and 311 abstracts and delivered 505 conference presentations. This year, the Section 721 researchers published 19 peer-reviewed manuscripts with findings on lifetime blast exposure, fluid biomarkers, sex differences, PTSD, chronic pain, facilitators and barriers to health care, and caregiver resilience and health-related quality of life.

These study findings will continue to inform TBI patient care on issues like mental health, improving health care systems, and family dynamics. A final report to Congress will be released in 2025, along with several additional articles on research studies. Prior updates to Congress are available on the [TBICoE website](#).

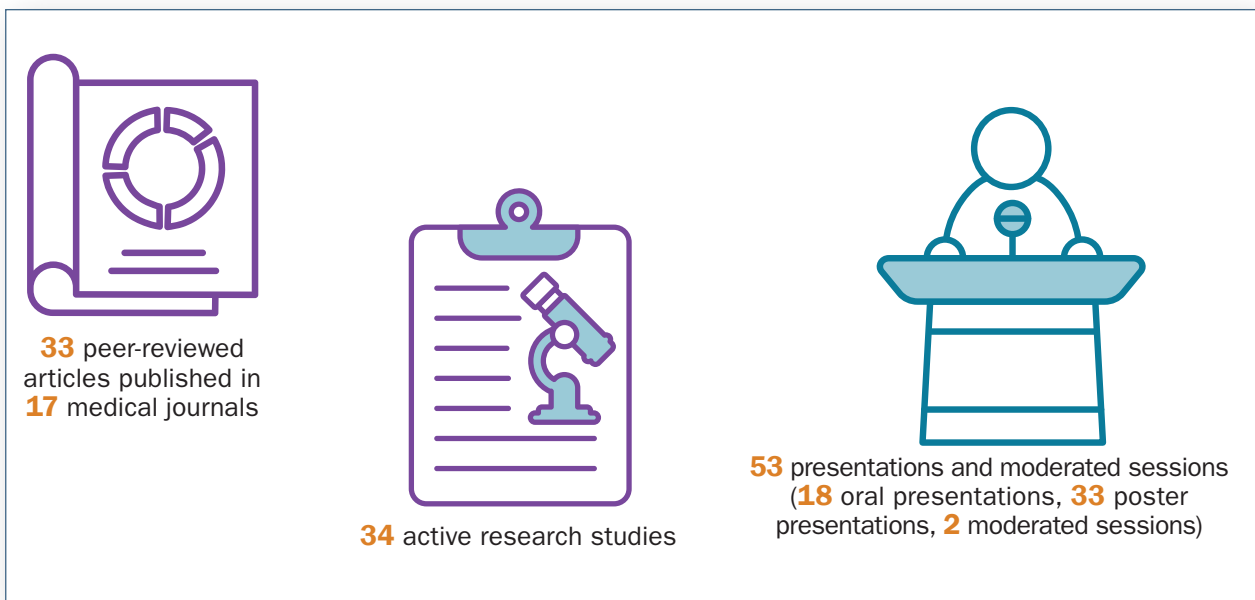
Publications and Partnerships

Collaborations

This year, TBICoE worked with over 50 internal and external collaborators on grant applications and research studies. These included academic and industry partners, DOD and non-DOD federal collaborators, and civilian medical research foundations, organizations, and hospitals.

Technical Consultation Requests

External stakeholders and organizations seek the expertise and professional judgement of our TBI subject matter experts. These consultation requests include manuscript reviews for journals, abstract reviews for conferences, grant reviews for funding organizations, and invitations to join journal editorial boards. In 2024, the TBICoE Research team completed 190 technical consultations.



Jason Bailie, a TBICoE senior clinical research director based at Camp Pendleton (TBICoE photo)



In March, TBICoE staff went to Capitol Hill for Brain Injury Awareness Day. From left: Heather Kopf, Elizabeth Pletcher, Rachael Kaufman, and Branch Chief Katie Stout (TBICoE photo)

Clinical Translation Office

The Clinical Translation Office creates novel knowledge translation products that synthesize the state of the science on TBI and brain health topics. CTO tailors its products based on level of evidence and stakeholder need to address questions from emerging TBI research and technology through informing best practices for researchers, clinicians, and the operational community. CTO works collaboratively with other TBICoE sections, DHA Centers of Excellence, and other DOD and federal partners to ensure subject matter expertise is incorporated in all products.

- Research Reviews: 3
- Clinical Pearls: 3
- Fact Sheets: 2
- Infographics: 4
- Information Papers: 6
- Evidence Briefs: 7

MEDICAL DEVICES FOR ASSESSMENT OF TRAUMATIC BRAIN INJURY
Traumatic Brain Injury Center of Excellence

WHAT IS A MEDICAL DEVICE?
The Food and Drug Administration defines a medical device as an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent, or other similar or related article intended to diagnose, treat, or prevent disease.

WHAT ORGANIZATION IS RESPONSIBLE FOR REGULATING MEDICAL DEVICES?
The FDA Center for Devices and Radiological Health is the only U.S. organization that can regulate medical devices.

HOW ARE MEDICAL DEVICES CLASSIFIED?

- The FDA classifies medical devices on a three-tier system (Class I-III) based on:
 - The risk of injury or illness with use
 - How the device is intended to be used
 - Indication(s) for use of the device
- **General controls** are basic provisions that give the FDA means for ensuring device safety and effectiveness.
- **Special controls** are device specific and are used when general controls do not provide sufficient mitigation of risk.

Class III

- High-risk devices
- FDA-approved devices
- Subject to PMA and general controls

Class II

- Moderate-risk devices
- FDA-cleared devices
- Most devices to aid in the assessment of TBI
- Subject to general and special controls (if indicated)

Class I

- Low-risk devices
- Subject to general controls
- May be exempt from premarket (510k) notification

Disclaimer: Research is still emerging on the safety and effectiveness of TBI-related devices. TBICoE and the Defense Health Agency **do not endorse or discourage** the use of any device. Clinicians, leaders, and researchers should use evidence-based research and **follow FDA guidance** when choosing medical devices for clinical or operational use.

Released February 2024 by the Traumatic Brain Injury Center of Excellence
This product is reviewed annually and is current until superseded. 800-870-9244 | health.mil/TBICoE

Product Spotlight 1: Medical Devices for Assessment of TBI

TBICoE developed the “[Medical Devices for Assessment of TBI](#)” fact sheet. This product defines common FDA terminology, describes how the FDA classifies devices, lists the FDA-cleared devices for assessing TBI, and provides insight on factors that should be considered before using a device.

Product Spotlight 2: Pain and TBI Research Review and Clinical Pearls

TBICoE developed both a Research Review that summarizes the state of the science on the pathophysiology, evaluation, and management of pain symptoms following TBI, as well as [Clinical Pearls](#) that provide key actionable takeaways for evaluating and treating pain symptoms in service members with TBI

CLINICAL PEARLS | AUGUST 2024
Traumatic Brain Injury and Chronic Pain
Traumatic Brain Injury Center of Excellence

KEY TAKEAWAY
Chronic pain is defined as pain that persists or recurs for three months or longer. The extent to which chronic pain interferes with TBI recovery, job performance, and return to duty is influenced by the presence of other co-occurring symptoms.

CURRENT PERSPECTIVE FOR THE MILITARY CLINICIAN
Evaluating and treating chronic pain after TBI is challenging due to its subjective nature. Post-traumatic headache is the most frequently reported type of chronic pain after a TBI, but pain in extraocular locations has also been reported. Evidence suggests that chronic pain can develop after TBI of any severity but is more common after mild TBI, and that multiple mild TBIs are associated with more severe pain than a single one. The co-occurrence of chronic pain, neuropsychiatric disorders (e.g., PTSD or depression), and TBI may worsen pain intensity, cognitive difficulties, sleep disturbances, and other symptoms.

CLINICAL PEARLS

- Consider TBI as a risk factor for increased pain symptom reporting.
- Carefully document the location and severity of pain, as well as activities that exacerbate or alleviate the pain, during the initial TBI assessment and follow-up visits.
- Numeric rating scales, such as the Defense and Veterans Pain Rating Scale (DVPRS 2.0), are preferred methods for assessing pain intensity.
- Consider severe pain at the initial visit and comorbid psychological conditions as risk factors for chronic pain.
- Promote effective nonpharmacological treatments for managing pain, such as healthy sleeping habits, light-to-moderate physical activity, a healthy diet, mindfulness meditation, and psychosocial interventions (e.g., cognitive behavioral therapy).
- Consider acetaminophen or nonsteroidal anti-inflammatory medications for short-term pain relief and amitriptyline or S-adenosylmethionine for long-term treatment.
- Use a patient-centered holistic approach to managing chronic pain after TBI to best promote functional recovery and return to duty.

REFERENCES

- Military Health System. Pain Management Toolkit. Available from: <https://www.health.mil/Military-Health-Topics/MIHC-Toolkits/Toolkits/Pain-Management>
- Harrison-Felix C, Seivigny M, Beaulieu CL, et al. Characterization and Treatment of Chronic Pain After Traumatic Brain Injury: Comparison of Characteristics Between Individuals With Current Pain, Past Pain, and No Pain: A NIDRR and VA TBI Model Systems Collaborative Project. *J Head Trauma Rehabil.* 2024;39(5):5-17.
- Loughner S, Khan M, Banang A, Madsen C, Koethimos TP. Prevalence of Polytrauma Clinical Triad Among Active Duty Service Members. *Mil Med.* 2022;187(7):4945-4961.
- Department of Veterans Affairs & Department of Defense. VA/DOD Clinical Practice Guideline for Management and Rehabilitation of Post-Acute Mild Traumatic Brain Injury. Updated 2021. Available from: <https://www.healthquality.va.gov/guidelines/trauma/tbi/>

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Do you have questions about this fact sheet? Feedback? Email cta@health.mil

Conferences and Meetings

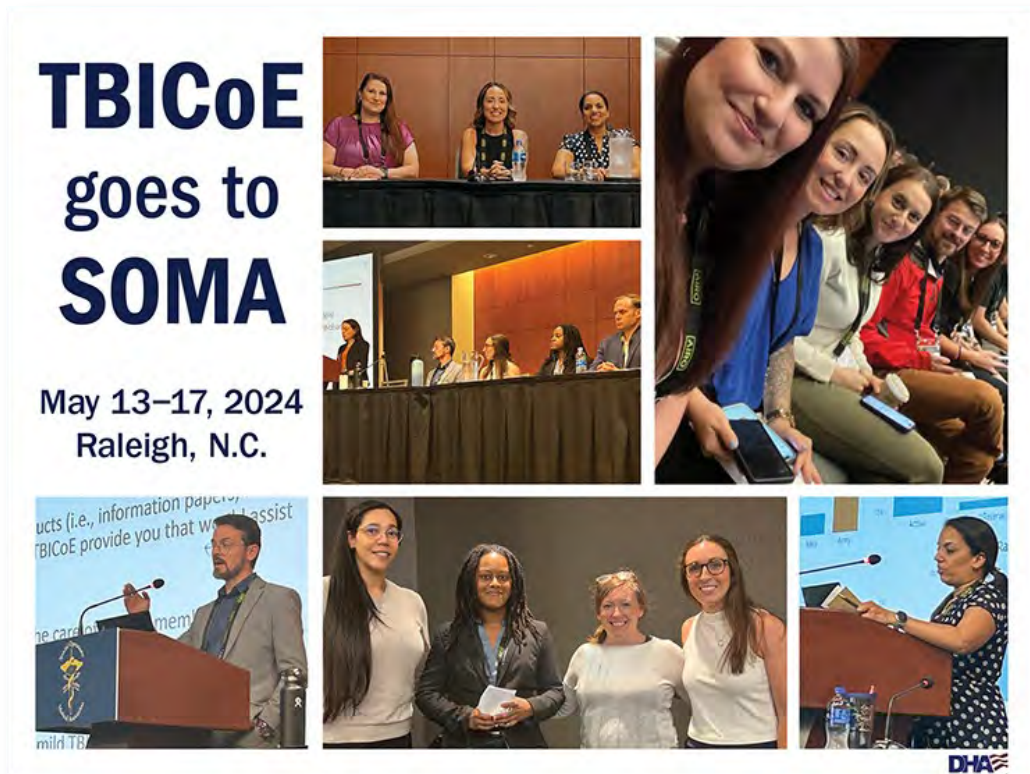
Conferences are an opportunity for TBICoE researchers to engage with external stakeholders, foster relationships, discuss important advances in the field, and represent our organization's expertise and study findings. TBICoE researchers attended 30 national and international conferences, external meetings, and seminars during 2024. Meetings with other DOD and VA entities throughout the year were intended to cultivate and strengthen relationships across the broader research landscape, promote stakeholder awareness and engagement, and encourage collaboration to ensure the advancement of the DHA mission and vision.

Military Health System Research Symposium

The 2024 MHSRS was held August 26-29, 2024, in Kissimmee, Florida. This symposium provided a significant platform for TBICoE researchers to share research findings, discuss relevant topics, and foster meaningful collaborations among stakeholders. TBICoE's 25 presentations and 2 moderated sessions spanned across multiple focus areas such as blast exposure, biomarkers of brain injury, implementation science practices, cognitive rehabilitation, family health, mental health, novel technology, Automated Neuropsychological Assessment Metrics updates, and vestibular rehabilitation. The Assistant Secretary of Defense for Health Affairs recognized TBICoE in the opening plenary session and highlighted the importance of research in warfighter brain health and TBI.

Special Operations Medical Association Scientific Assembly

TBICoE organized and led the Brain Health Track at the annual SOMA Scientific Assembly in Raleigh, North Carolina, with representation from not only the Research section but also Clinical Affairs and the Mission Support Office. Among the topics they covered were DOD policies and tools for screening, evaluating, and treating TBI in service members; the estimated risk of TBI within various military occupational specialties; medical devices and biomarkers for assessing TBI; and the link between TBI and alcohol misuse.



Senior Clinical Research Director Meeting

In October, TBICoE's senior research staff attended an internal two-day meeting at TBICoE headquarters in Silver Spring, Maryland, to optimize current and future research efforts. Members of the TBICoE Research team met with internal and external partners to provide visibility and foster discussion on high-level items, generate solutions for challenges, and discuss strategies for enhancing alignment to DHA research.



TBICoE Branch Chief Katie Stout (far left) and researchers came to headquarters for a two-day conference. (TBICoE photo)



USPHS Cmdr. Todd Cesar, chief of the Clinical Affairs office of outcomes and assessments (TBICoE photo)



Gary McKinney, chief of the Clinical Practice and Clinical Recommendations team (TBICoE photo)

PHCoE & TBICoE State of the Science Meeting

Subject matter experts from the DOD, VA, and frontline research institutions met to discuss recent findings on comorbid TBI and PTSD. Presentations focused on crucial health considerations for service members and veterans with relevant topics surrounding symptoms, presentation, outcomes, and treatment. Throughout the year, the DHA Centers of Excellence have maintained active collaboration.

Clinical Affairs

The Clinical Affairs section has three main functions:

- Provide Warfighter Brain Health-related and TBI-related epidemiological and surveillance data support to military leaders and the DOD community
- Develop state-of-the-science clinical recommendations and tools for military health care providers treating those exposed to brain health threats and potentially concussive events
- Promote optimal brain health outcomes for the warfighter through superior analytics and reporting of relevant TBI programs, policies, and strategies

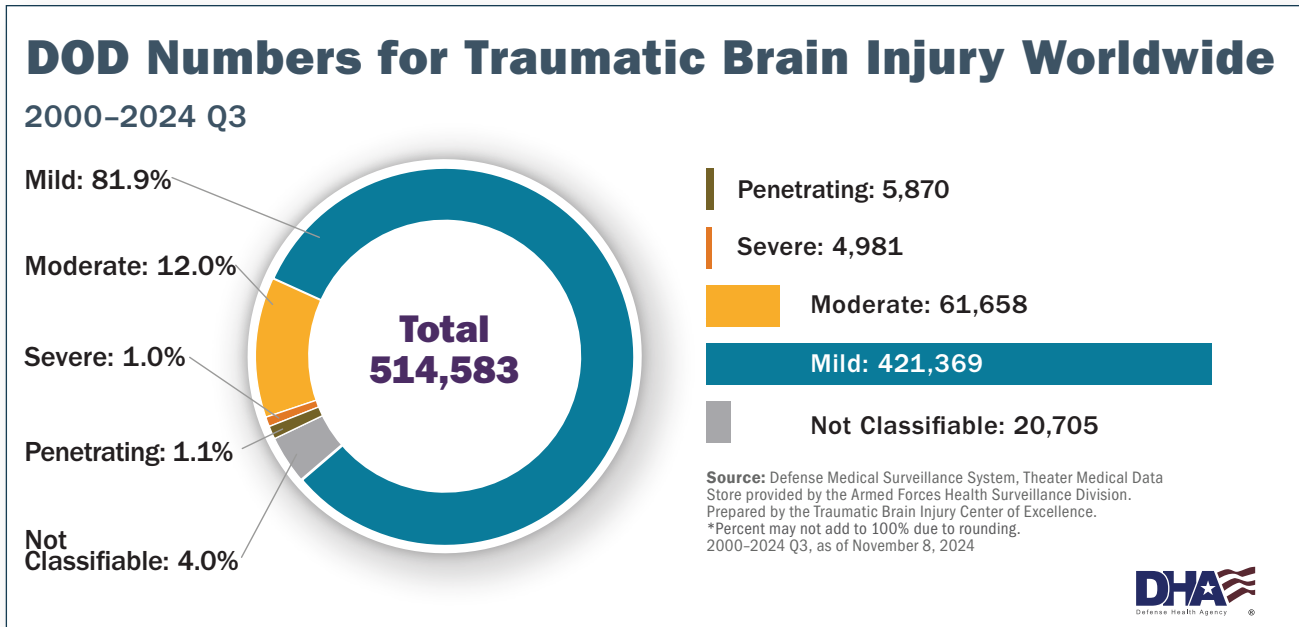


Stephanie Maxfield Panker
Clinical Affairs Section Chief

Surveillance

In 2024, the surveillance team contributed to the growing body of scientific literature with three new publications. The team created five dashboards hosted on the CarePoint Information Portal that provide users an interactive experience for reports and published articles. In addition, the team responded to requests for data and analysis from multiple stakeholders in the DHA and other organizations.

In 2007, the DOD charged TBICoE with reporting the official tally of service members who have sustained TBIs. To accomplish this mission, TBICoE’s surveillance office uses data from the Armed Forces Health Surveillance Division to publish a quarterly update of the number of active duty service members with a first-time TBI. As of November 2024, the total since 2000 was 514,583. The team also generates quarterly reports on TBI-related medical encounters among service members and beneficiaries.

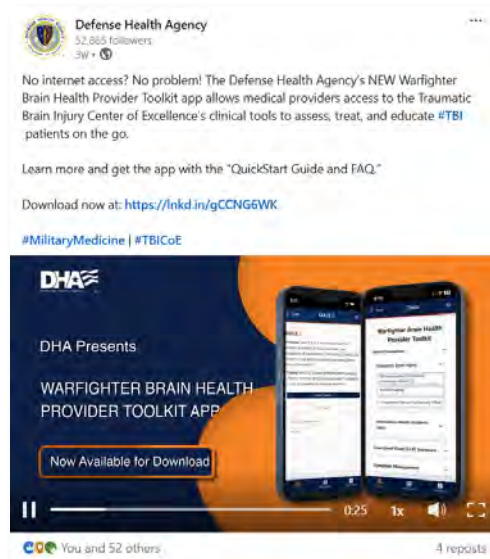


Clinical Practice and Clinical Recommendations

TBICoE’s clinical practice and clinical recommendations team develops practical, easy-to-use clinical tools to support health care providers in assessing and treating service members and veterans who have sustained a TBI. Providers can access clinically relevant information that addresses common symptoms associated with mild TBI, such as headache, sleep disturbances, and vision problems. All resources are available to download at health.mil/TBIProviders.

In 2024, the CPR team released the [Management of Post-Traumatic Headache Following Mild TBI Clinical Recommendation](#). In addition, the team, updated the [DOD Low-Level Blast Exposure Provider Fact Sheet](#) to

include coding guidance as well as completed minor revisions to the [Assessment and Management of Sleep Disturbances Following Concussion/Mild Traumatic Brain Injury: Guidance for the Primary Care Manager Clinical Recommendation](#). TBICoE subject matter experts also collaborated on updating the American Congress of Rehabilitation Medicine’s Diagnostic Criteria for Mild TBI and presented at the Military Health System Research Symposium, the Special Operations Medical Association conference, and other meetings and conferences. The CPR team launched the [Warfighter Brain Health Provider Toolkit](#), a mobile application that helps clinicians manage concussion and other brain health threats



TBI Outcomes and Assessment

The office of outcomes and assessment team evaluates clinical documentation and provides feedback to the TBI clinical communities across the MHS. In 2024, the team performed analyses regarding data reporting trends, provider instruction for patient follow-up in the non-deployed environment, and compliance of required reporting of potentially concussive events in the deployed environment. In addition, the team examined care trajectory, reporting, and documentation of post-operational events.

They also conducted an analysis on the adoption and utilization of the newly launched MHS GENESIS MACE 2 and Progressive Return to Activity online assessment tools. This research led to recommendations for refining score calculations, which may lead to uncovering errors in score calculations that may have led to missed concussion diagnoses.

Mission Support

The Mission Support Office provides administrative and operational support to advance TBI mission priorities across the organization and throughout 16 DHA facilities, including TBICoE’s national headquarters in Silver Spring, Maryland. Much of this work is done behind the scenes, including regulatory compliance, process improvements, and business operations. MSO’s public-facing work streams disseminate, communicate, and educate the public about our research findings, surveillance data, products, and tools to improve the care of service members with TBI.



USPHS Capt. Tricia Booker
Mission Support Office
Section Chief



The Mission Support Office team gathers at headquarters. (TBICoE photo)

Brain Injury Awareness Campaign

TBICoE takes the lead in shaping and amplifying the DHA's annual Brain Injury Awareness Campaign. The MSO coordinated activities to publicize TBI research, clinical support, and education efforts. The teams continued to use virtual formats for DHA-wide events; provided in-person events across the [Defense Health Networks](#); and used various digital platforms (social media, podcasts, the Military Health System website, and email marketing) to promote the "Be A Brain Warrior: Protect, Treat, Optimize," theme. Network dissemination coordinators hosted TBICoE's Annual Brain Health Symposium as well as five other virtual enterprise-wide events on topics ranging from TBI care in operational environments to TBI accommodations such as assistive technology and service dogs.



Accomplishments in 2024 included:

- Network dissemination coordinators hosted **383** training, education, and outreach events attended by **9,739** stakeholders. There was a **24%** increase in total attendance and a **78%** increase in education/outreach attendance from 2023 to 2024.
- A two-part [Picking Your Brain](#) podcast series showed how researchers are addressing specific barriers to health care for service members and veterans with TBI. The episodes proved popular throughout the year, generating a total of **1,622** plays and **830** downloads.
- TBICoE supported the National Museum of Health and Medicine with two events: the [Science Café on Headaches and TBI: A Journey of Treatment Over Time](#) and Brain Awareness Day, where our Fort Belvoir-based network dissemination coordinator provided TBI information and resources to museum visitors.
- Dynamic messaging promoting TBICoE's two monthly email newsletters drove a **33% subscriber increase** to both.
- Proactive social media planning to promote activities on Facebook and DHA's LinkedIn page resulted in a **58% increase in reach** on Facebook over 2023 and over **400** engagements on TBICoE-centered LinkedIn posts.



Jamie Hershaw-Velasquez, senior clinical research director based at Joint Base San Antonio (TBICoE photo)

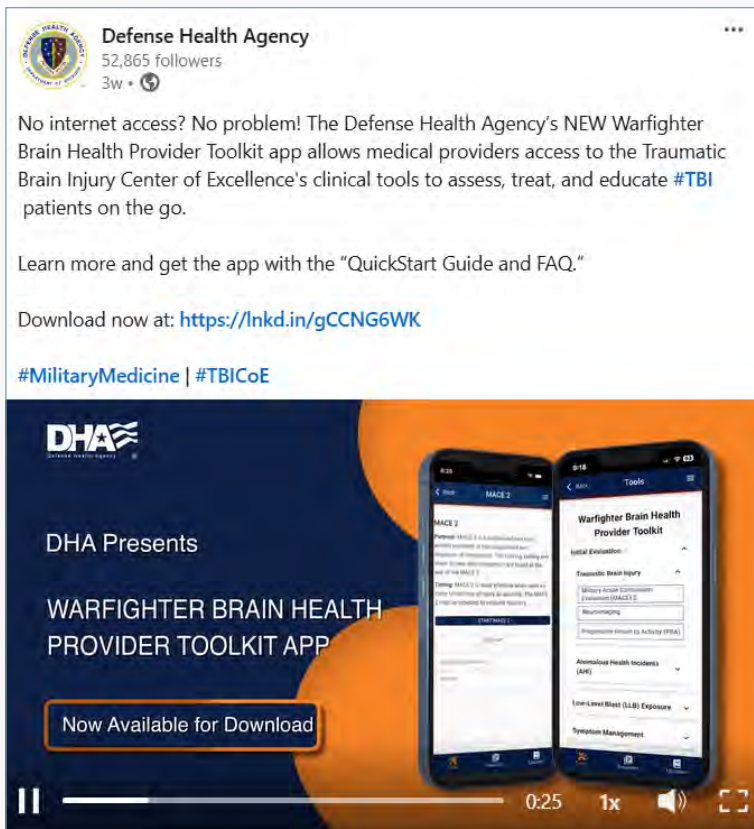


Communications

The communications team provides expertise in strategic planning, content development, and consistent messaging in various platforms about TBICoE and its research activities, clinical recommendations, provider trainings, and educational information for all stakeholders. The team coordinates with all TBICoE sections; the DHA communications team and partners; and other DOD organizations to grow engagement of current communications channels.

Social Media

This year, collaboration drove TBICoE’s social media strategy. On [Facebook](#), we engaged other Military Health System, DOD, and government organizations to raise awareness of our mission, research, clinical tools, fact sheets, and trainings. Some of our most successful content have been short-form video reels featuring TBICoE staff, including USPHS Capt. Stephanie Felder’s contribution to the DOD’s [#WhyIServe](#) campaign. Felder’s video was shared by DHA on multiple social media platforms and recognized by the United States Public Health Service. DHA also featured our presenters, research, staff, and products on LinkedIn, garnering **2,735 engagements** since our collaboration began in April.



Podcasts and Videos



The “Clinical Updates in Brain Injury Science Today” ([CUBIST](#)) podcast, driven by the Research section and produced by the communications team, discusses the latest TBI research relating to patient care. Guests often include the principal investigators and other subject matter experts. In 2024, TBICoE released **12** episodes which generated over **6,000** streams.

The “[Picking Your Brain](#)” podcast focuses on the care and recovery of service members and veterans with TBI. In 2024, the podcast featured a two-part episode exploring the VA’s I-HEAL study led by Risa Richardson at the James A. Haley Veterans Hospital. The study focuses on barriers to high-quality care for TBI patients.

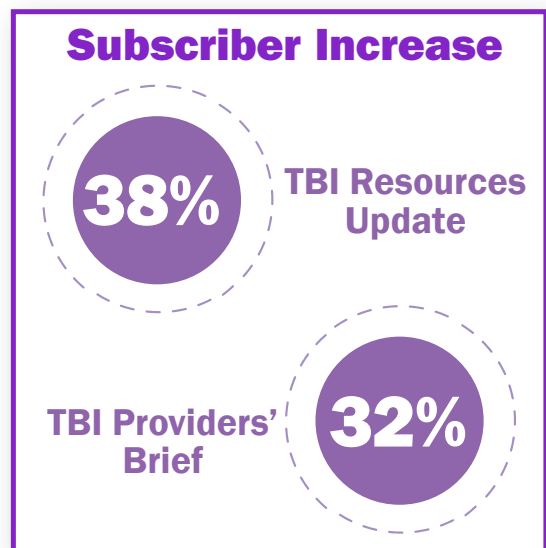
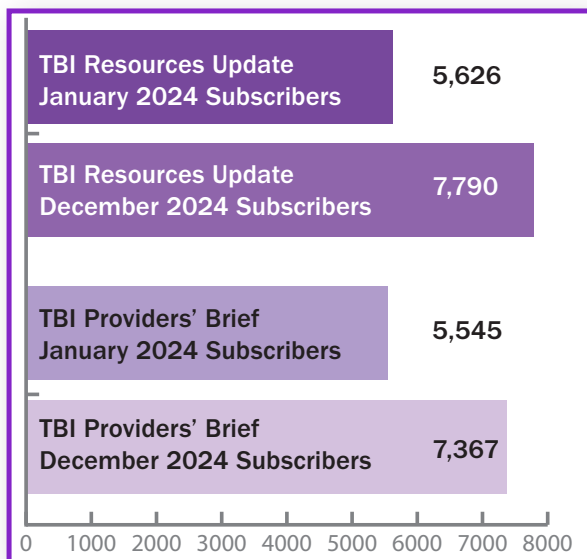


Our video production team supports all aspects of TBICoE by producing content that enhances each section’s messaging and communicates our value to a broader audience. This multimedia content is essential for advancing warfighter brain health by raising awareness of TBI research and clinical and educational resources. In 2024, we created a series of short videos to highlight information on key TBI topics. The “Talking TBI” video series includes:

- [Talking Blast Exposure Impact With TBICoE](#)
- [Talking TBI Recovery With TBICoE](#)
- [Talking Traumatic Brain Injury: How Common Are They in the Military?](#)

Email Newsletters

Each month, TBICoE sends two newsletters to different groups of stakeholders. The TBI Providers’ Brief targets MHS providers, researchers, and leaders, and the TBI Resources Update goes to patients, families, and other general audiences. In 2024, subscribers to both newsletters increased by more than 30% over the course of the year.



Dissemination

The dissemination team oversees developing TBI educational products and training for providers, patients, and caregivers. Among these are training products for the clinical tools identified in the [DHA-PI 6490.04 Required Clinical Tools and Procedures for Assessment and Clinical Management of Mild Brain Injury \(mTBI\)/Concussion in Non-Deployed Setting](#): the [MACE 2](#) and the [PRA](#) for the assessment, management, and rehabilitation of all service members with mild TBI/concussion.

Network dissemination coordinators, previously known as regional education coordinators, cover all the [Defense Health Networks](#) and are embedded at 12 military hospitals and clinics in the U.S. and Germany, where they offer in-person and virtual training,

education opportunities, and DOD TBI policy updates throughout the year. The job title change from REC to NDC, which took effect this year, aligns with DHA's focus, language, and plan for TBICoE's Dissemination section. Dissemination and training on TBICoE clinical recommendations, products and resources is vital: TBICoE [researchers have found](#) patients of health care providers with intensive training on the PRA clinical recommendation experienced a reduction in symptoms after one week and overall improved recovery at the one-month and three-month intervals when compared to patients who had been treated by providers without training. For more information on training opportunities, please visit health.mil/NDC or email dha.TBICoEDissemination@health.mil.

Dissemination and Implementation

The Dissemination and Implementation team, in its second year at TBICoE, was established to help translate research into clinical practice. The D&I team works strategically to improve stakeholder engagement in the development of TBICoE products, continues to foster external partnerships, furthers evidence-based implementation efforts, and advises on study protocols. The team also provides project consultation across TBICoE to support clinical recommendations, trainings, metrics development, and new implementation science efforts in the research portfolio. Other 2024 initiatives include expanding TBICoE's D&I footprint and contribution to the growing field of implementation science through presentations at the American Congress of Rehabilitation Medicine, the Special Operations Medical Association, and the Military Health System Research Symposium, as well as to internal DHA partners.



D&I team members Seth Kiser and Rachael Kaufman and sports medicine physician Dr. Keith Stuessi, a TBI subject matter expert, presented at the 2024 American Congress of Rehabilitation Medicine. (TBICoE photo)

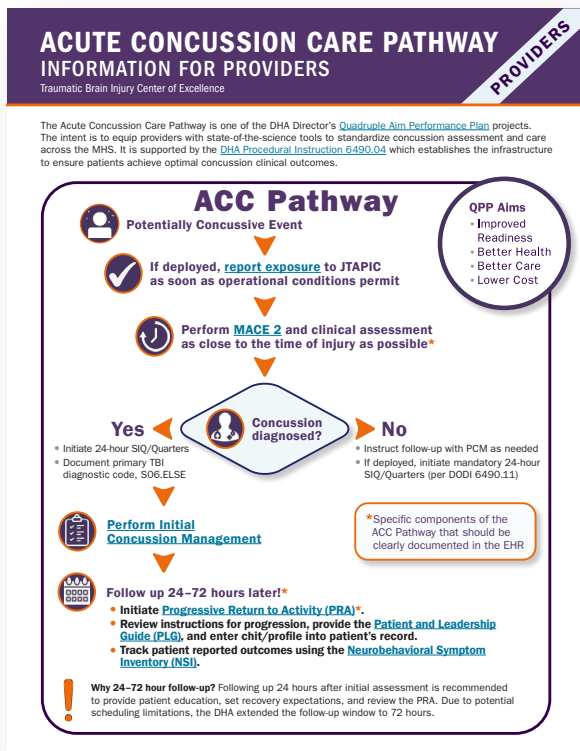
Dissemination Products

Working closely with the Research and Clinical Affairs sections as well as other DOD entities, the dissemination team updates existing products and creates new ones based on identified knowledge gaps. In 2024, they developed several products to complement the newly revised [DOD clinical recommendation](#) on assessment and management of headache after concussion, including a [patient fact sheet](#) and training materials for both primary and non-primary care managers. Other 2024 highlights include:

- Updating the [Acute Concussion Care Pathway Fact Sheet](#) with information on reporting requirements in the deployed setting.
- Working with the [Joint Trauma System](#) to develop the Tactical Military Acute Concussion Evaluation (T-MACE) for combat medics and corpsmen in Role 1 deployed environments.
- Revising information on [Low Level Blast Service Member Fact Sheet](#) in collaboration with Office of the Assistant Secretary of Defense for Health Affairs.
- Renewing eight trainings in the DHA Continuing Education Management System, allowing TBICoE to continue offering CE credits for learners.

Regional Dissemination

TBICoE has 12 network dissemination coordinators geographically dispersed across the 9 Defense Health Networks. They provide education, training, outreach, and dissemination of TBI-related materials across DOD clinical and operational communities. NDCs promote TBI awareness to leaders across the U.S. uniformed services and the VA, as well as to service members, their families, and caregivers. The [DHA procedural instruction](#) guides service members on the use of and appropriate training on the MACE 2 and PRA, which all NDCs are qualified to provide. NDCs also educate operational leaders on Warfighter Brain Health ensuring they are knowledgeable and ready to deploy this information. They develop site-specific educational trainings and collaborate on enterprise-wide events.



QUARTERLY EDUCATION SERIES 2024
Traumatic Brain Injury Center of Excellence

- Prolonged Field Medicine and TBI**
March 22 • 2 to 4 p.m. ET
- Left of The Boom**
June 20 • 2 to 4 p.m. ET
- TBI and Mental Health**
Sep. 20 • 2 to 4 p.m. ET
- Optimizing Hearing and Vision Recovery**
Nov. 14 • 2 to 4 p.m. ET

Learn more about this series at health.mil/TBICoE_QES.

Notable accomplishments in 2024 included:

- Conducting in-person and virtual training sessions for 59,712 attendees; a 47% increase in number of people reached in 2024
- Presenting outreach, education, and training events to 71,417 stakeholders; a 8% increase in engagement/reach compared to 2023
- Providing four virtual MHS-wide [Acute Concussion Care Pathway trainings](#) on the [MACE 2](#) and [PRA](#)
- Hosting the popular annual [TBI Quarterly Education Series](#), drawing 522 total attendees to learn about:
 - Prolonged Field Medicine and TBI
 - Left of the Boom
 - TBI and Mental Health
 - Optimizing Hearing and Vision Recovery Care
- Equipping NDCs to train providers on the [Management of Headache following Concussion/ mTBI Clinical Recommendation: Guidance for non-Primary Care managers](#)
- Supporting the DHA Deputy Assistant Director of Medical Affairs through submitting monthly metrics for provider trainings on the MACE 2 and PRA
- Fostering collaboration through outreach to the Special Operations community, Army National Guard, and the U.S. Coast Guard, among other stakeholders
- Conducting 11 TBI Grand Rounds for the VA Polytrauma Rehabilitation Center staff on topics such as TBI impacts on the family, headache management following mild TBI, and chronic pain and TBI



Our network dissemination coordinators plan events and lead trainings throughout the U.S. Clockwise from top left: Fort Campbell NDC Shannon Glinksi; Joint Base San Antonio NDC Toni McCall; Fort Belvoir NDC Heather Kopf; and Fort Bragg NDC Mary Howell (left) at an event hosted by Camp Lejeune NDC Elizabeth Burleson.