EPILEPSY RESEARCH PROGRAM

CDMRP
DEPARTMENT OF DEFENSE
CONGRESSIONALLY DIRECTED MEDICAL RESEARCH PROGRAMS

MISSION: To understand the mechanisms of post-traumatic epilepsy and associated comorbidities to improve quality of life, especially in Service Members, Veterans, and caregivers

Congressional Appropriations FY15-FY24:
$97.5M total

"Having the opportunity to be a part of the of Epilepsy Research Program as a Consumer Reviewer has allowed me to see the work that is being done for the epilepsy community. It has allowed me to see how funds are used as well as giving input towards decisions that will help impact the outcomes of Veterans and their caregivers. I look at this as an amazing way to give back to our Veterans who have held the fence to protect our soil."

Tanisha Tyler Graves,
Danny Did Foundation,
FY22 Consumer Peer Reviewer

SCOPE OF THE PROBLEM

PTE is associated with a **higher risk of death**[1]

The likelihood of developing PTE after TBI ranges from **2%-50%** depending on the severity and location of the injury[2]

Among people aged 15 years and older hospitalized for a TBI, about
1 in 10 developed epilepsy
in the following 3 years[3]

RELEVANCE TO MILITARY HEALTH

- Over a 22-year period, **>450,000** Service Members reported a TBI[4]

- PTE currently affects an estimated **2,187** Iraq/Afghanistan Veterans, with a *5-times-higher mortality rate* than other Veterans receiving care in the VA[5]

PROGRAM PRIORITIES

- **Innovative Research:** Tools intended to better inform or improve upon PTE research and care

- **Markers and Mechanisms:** Identifying biomarkers or mechanisms of PTE

- **Epidemiology:** Epidemiological characterization of PTE following TBI

- **Longitudinal Studies:** Studies of the evolution of PTE

[1] Karlander M, et al. *J Neurol* 269, no.11, 2020:6014-6020.
[2] Golub VM, et al. *PharmacolRev* 74, no.2, 2020:387-438.
[3] Ferguson PL, et al. *Epilepsia* 51, no.5, 2010:891–898.
[4] Traumatic Brain Injury Center of Excellence. DOD TBI Worldwide Numbers 2000-2023. 2023.
[5] Pugh MJ, et al. *MMWR 65*, no.44, 2016:1224-1227.

For more information, visit: https://cdmrp.health.mil/erp

PROGRAM IMPACT AND OUTCOMES
The ERP addresses three strategic priorities that confront systemic challenges within the PTE field.

EXPANDING RESEARCH CAPACITY
In FY22, the ERP initiated the **Virtual Post-Traumatic Epilepsy Research Center**, a collaborative funding strategy aimed at developing successful, highly productive PTE researchers. Through this effort, the program looks to enhance the quality and expand the quantity of PTE researchers by providing opportunities for collaboration, networking, and mentorship among the PTERC leadership, faculty, and other participants.

DIRECTOR AND DEPUTY DIRECTOR

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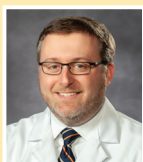University of Pennsylvania

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PRIORITIZING COLLABORATION

Collaborative Care to Improve Quality of Life

A remote intervention integrating neurological and psychological care with a care management coach and social workers that aims to:

- Increase patient access to care
- Improve anxiety and depression in PTE
- Address patient quality of life needs in the neurology setting

LASSO PTE Risk Calculator

This tool predicts the likelihood of PTE development after a TBI. Developed, optimized and validated with data and resources from:

- TBI Model Systems National Database
- Veterans Health Administration datasets
- DOD-supported datasets

BUILDING UPON SUCCESS

New for FY24 – Leveraging Research Award
The new Leveraging Research Award aims to expand research studies for which PTE was not an original focus but where introducing PTE outcomes, assessments or analyses would increase understanding of PTE.

BrainSync – Innovative Tool for Detection of PTE
The ERP funded development of this functional magnetic resonance imaging tool used to construct high-resolution maps of brain surfaces. Follow-on funding from the ERP supports advancing BrainSync software to predict the risk of PTE from MRI data following TBI.

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