

# Congress of the United States

Washington, DC 20515

May 29, 2024

The Honorable Gene Dodaro  
Comptroller General  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, D.C. 20548

Dear Comptroller General Dodaro:

We write to request a Government Accountability Office (GAO) review of DoD efforts to identify, prevent, and treat traumatic brain injuries related to service members' exposure to blast overpressure.

Traumatic brain injury (TBI) is considered one of the "signature wounds" of the wars in Iraq and Afghanistan.<sup>1</sup> It remains a key health concern for service members, with the Department of Defense ("DoD" or the "the Department") providing treatment to service members for TBI nearly 50,000 times over the course of just three months in 2023.<sup>2</sup> In 2022, the Department provided TBI treatment over 210,000 times.<sup>3</sup> While the Department of Defense has spent almost \$3 billion on TBI research from fiscal year (FY) 2020 to FY 2023,<sup>4</sup> major gaps remain in turning this research into action to better protect service members' brain health, particularly to mitigate the impact of blast exposure and overpressure on service members.<sup>5</sup>

Blast overpressure, which occurs when the pressure from a shock wave exceeds normal atmospheric values, harms the brain by moving the brain inside the skull and damaging it at a

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<sup>1</sup> Center for a New American Security, "Protecting Warfighters from Blast Injury," Lauren Fish and Paul Scharre, April 29, 2018, <https://www.cnas.org/publications/reports/protecting-warfighters-from-blast-injury>; National Library of Medicine, "Traumatic Brain Injury in Iraq and Afghanistan Veterans: New Results from a National Random Sample Study," Lisa Lindquist, Holly Love, and Eric Elbogen, Summer 2017, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5501743/>.

<sup>2</sup> Response to Requests for Information from the Department of Defense to Senator Elizabeth Warren, "DoD Response to Questions from Senator Elizabeth Warren," pp. 3-4, February 21, 2024, [On file with the Office of Senator Elizabeth Warren].

<sup>3</sup> *Id.*

<sup>4</sup> Congressional Research Service, "Memorandum: Department of Defense Efforts to Prevent, Evaluate, and Treat Mild Traumatic Brain Injuries," Bryce H. P. Mendez, Carly A. Miller, Sarah Gee, February 20, 2024, [On file with the Office of Senator Elizabeth Warren].

<sup>5</sup> U.S. Senator Elizabeth Warren, "ICYM: Warren Chairs Personnel Subcommittee, Highlights Impact of Blast Exposure on Health and Urges DoD to take Action to Protect Service Members," press release, March 1, 2024, <https://www.warren.senate.gov/newsroom/press-releases/icymi-warren-chairs-personnel-subcommittee-highlights-impact-of-blast-exposure-on-health-and-urges-dod-to-take-action-to-protect-service-members>.

sub-cellular level.<sup>6</sup> A November 2023 *New York Times* investigation revealed that troops from artillery batteries who had bombarded the Islamic State with large numbers of artillery rounds in 2016 and 2017 returned home experiencing nightmares, hallucinations, panic attacks, and suicidal ideation, among other symptoms.<sup>7</sup> The Marines Corps found that the artillery crews firing a high number of rounds “could result in the artillery community suffering injuries faster than combat replacements can be trained to replace them.”<sup>8</sup>

The impact of blast exposure on troops remains a deeply bipartisan concern. In response to these *New York Times* reports, several of us sent a letter to the Department of Defense requesting more information on steps the Department is taking to protect service members from blast overpressure.<sup>9</sup> The *New York Times* reporting revealed that despite policy changes at higher levels, “things have hardly changed on the ground” and “[t]raining continues largely as it did before.”<sup>10</sup> On February 28, the Senate Armed Services Personnel Subcommittee held a hearing on traumatic brain injury and blast exposure care, where both Democrats and Republicans raised concerns about needing to better protect our service members.<sup>11</sup>

This hearing made clear that there is uncertainty over DoD’s strategy and plan for implementation. Members raised several points about opportunities for DoD to engage on this issue, including how it is fielding Food and Drug Administration (FDA)-approved wearable devices to reduce the risk of TBI and how it is leveraging opportunities to share research with allies and partners.<sup>12</sup> Tracking improvised explosive device (IED) exposure of service members and understanding how the levels of exposure and prevention efforts for service members in the artillery units in Iraq and Syria compare to those of other wars provides important insights about tackling this issue.<sup>13</sup> However, DoD is not expecting the results of its business case analysis and lessons learned on blast monitoring to be completed until September 2024, leaving service members still waiting for substantive change.<sup>14</sup> The Department needs to take more urgent action

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<sup>6</sup> Center for a New American Security, “Protecting Warfighters from Blast Injury,” Lauren Fish and Paul Scharre, April 29, 2018, <https://www.cnas.org/publications/reports/protecting-warfighters-from-blast-injury>; New York Times, “A Secret War, Strange New Wounds, and Silence from the Pentagon,” Dave Philipps, November 5, 2023, <https://www.nytimes.com/2023/11/05/us/us-army-marines-artillery-isis-pentagon.html>.

<sup>7</sup> New York Times, “A Secret War, Strange New Wounds, and Silence from the Pentagon,” Dave Philipps, November 5, 2023, <https://www.nytimes.com/2023/11/05/us/us-army-marines-artillery-isis-pentagon.html>.

<sup>8</sup> Marine Corps Directorate of Analytics & Performance Organization, “Blast Overpressure Effects,” March 2019, p. 2, [https://www.hqmc.marines.mil/Portals/61/Users/019/71/4371/Overpressure%20Study%20Report%2020191025.pdf?ver=Nta6RKsuKvaHCTG\\_HrY1MQ%3D%3D](https://www.hqmc.marines.mil/Portals/61/Users/019/71/4371/Overpressure%20Study%20Report%2020191025.pdf?ver=Nta6RKsuKvaHCTG_HrY1MQ%3D%3D).

<sup>9</sup> Letter from Senators Elizabeth Warren, Joni Ernst, and Thom Tillis to Secretary of Defense Lloyd Austin, January 18, 2024, <https://www.warren.senate.gov/imo/media/doc/2024.01.18%20Letter%20to%20Department%20of%20Defense%20re%20Blast%20Overpressure1.pdf>.

<sup>10</sup> New York Times, “U.S. Troops Still Train on Weapons with Known Risk of Brain Injury,” Dave Philipps, November 28, 2023, <https://www.nytimes.com/2023/11/26/us/military-brain-injury-rocket-launcher.html>.

<sup>11</sup> Senate Committee on Armed Services, Subcommittee on Personnel, “Traumatic Brain Injury and Blast Exposure Care,” February 28, 2024, <https://www.armed-services.senate.gov/hearings/to-receive-testimony-on-traumatic-brain-injury-and-blast-exposure-care>.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

to mitigate blast overpressure and support service members. Otherwise, troops will continue to struggle to get the care they need and deserve.

To better understand what additional actions are needed, we request that the GAO conduct a review based on the following questions:

1. What DOD entities are conducting research on TBI, blast overpressure, and blast exposure, what is the focus of their research, and how are they coordinating their efforts?
2. What improvements has DOD identified from this research, specifically as related to the prevention, diagnosis, and treatment of blast-related TBIs and other symptoms of that result from blast overpressure and blast exposure?
  - a. What is the implementation status of these efforts?
  - b. How are DOD and its military departments ensuring that these improvement efforts are being implemented?
3. What steps is DoD taking to protect service members from retaliation for coming forward to seek care for traumatic brain injury?
  - a. What gaps exist in protecting service members from retaliation?
  - b. What barriers are there for service members seeking treatment throughout the duration of their career, rather than at its end?
4. Is the DoD list of most at-risk military occupational specialties for blast exposure adequate?
  - a. Are there additional at-risk occupational specialties that should be included, either across services or specific to one?

Thank you for your attention to this request.

Sincerely,



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Elizabeth Warren  
United States Senator



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Joni K. Ernst  
United States Senator



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Ro Khanna  
Member of Congress



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Elise M. Stefanik  
Member of Congress



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Rick Scott  
United States Senator



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Kirsten Gillibrand  
United States Senator



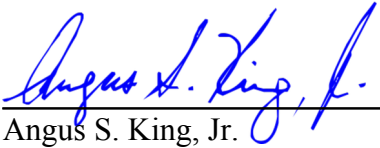
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Mazie K. Hirono  
United States Senator



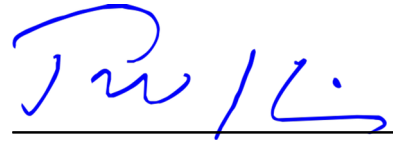
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Dan Sullivan  
United States Senator



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Angus S. King, Jr.  
United States Senator



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Tim Kaine  
United States Senator



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Markwayne Mullin  
United States Senator



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Susan M. Collins  
United States Senator



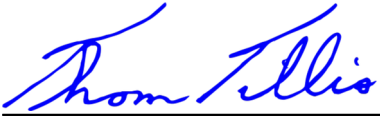
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Benjamin L. Cardin  
United States Senator



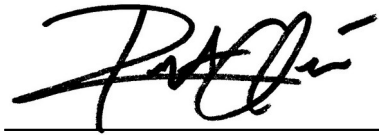
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Martin Heinrich  
United States Senator



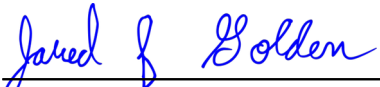
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Thom Tillis  
United States Senator



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Robert Garcia  
Member of Congress



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Jared Golden  
Member of Congress



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Jimmy Panetta  
Member of Congress



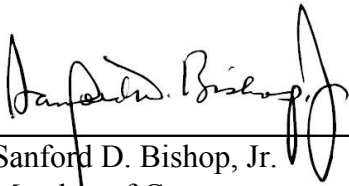
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Chrissy Houlahan  
Member of Congress



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Seth Moulton  
Member of Congress



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Sanford D. Bishop, Jr.  
Member of Congress



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Joseph D. Morelle  
Member of Congress



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Chellie Pingree  
Member of Congress



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Susie Lee  
Member of Congress