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## Welcome to the Burn Pit: Where the Black Goo Oozes and the Green Ponds Glow

Carlissa R. Carson

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# Welcome to The Burn Pit: Where the Black Goo Oozes and the Green Ponds Glow

Carlissa R. Carson\*

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## ABSTRACT

Studies estimate that millions of servicemen and women were involuntarily exposed to toxic burn pits while deployed overseas to

countries such as Uzbekistan and Afghanistan. A growing number of these servicemembers have developed severe health complications because of this exposure. Long after lacing up their last combat boot, these servicemembers are battling a bloated bureaucracy while suffering with war wounds. They are being denied healthcare and disability benefits despite this nation's promise to care for veterans injured during their time in service. These pits, used in the absence of waste management alternatives, were often doused with jet propellant 8 and set ablaze to slowly burn human waste, medical waste, Styrofoam, plastics, wood, and other items. Recent scientific and medical research indicates that burn pits produce cancer-causing dioxins and poisons such as arsenic and carbon monoxide. Given the number of persons exposed and levels of toxicity, burn pit exposure is likely to become the Agent Orange of this generation. Servicemembers with burn pit exposure and diseases or illnesses linked to this exposure should have efficient and effective access to healthcare and disability compensation. To date, Congress and the Department of Veterans Affairs (VA) have failed to provide these servicemembers with the same favorable presumptions extended to Vietnam War veterans with Agent Orange exposure. As such, the VA has denied up to 75% of claims filed based on burn pit exposure, leaving countless servicemembers without redress. Despite mounting scientific evidence and the VA's failure to act, it appears few articles have been published to highlight the growing concerns among servicemembers with burn pit exposure and the need for the same presumptive service connection that is available to Vietnam War veterans and others.

The promise of care should be upheld. Congress or the VA should act. To properly address burn pit exposure and resulting illnesses, servicemembers must have preventative and ongoing healthcare. Additionally, the VA should create a list of presumptive conditions based on well-founded scientific research as it did for Vietnam War veterans. The VA should set forth a framework for continued scientific research and fashion proper eligibility limitations to safeguard existing veterans' benefits programs.

#### INTRODUCTION

Between 1964 and 1973, the United States drafted more than 1.5 million men involuntarily to wage war during the Vietnam Era.<sup>1</sup> On June

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\* Lieutenant Colonel, United States Air Force (Air National Guard), Staff Attorney, Emory University School of Law's Volunteer Clinic for Veterans, Adjunct Professor, Emory University School of Law. I am thankful for the

30, 1973, Dwight Elliot Stone was, as he is referred to today, “the last man.”<sup>2</sup> The United States has maintained an all-volunteer force (AVF) since July 1, 1973. Since 1973, thousands of men and women have voluntarily signed on a blank line with a tightly gripped pen, raised a right hand, and professed a promise to defend the United States’ constitution against all enemies, both foreign and domestic. The sons and daughters entering the AVF make this promise in reliance on a return promise—that if they suffer health consequences because of their service, they will be cared for by a grateful nation.

President Abraham Lincoln, in his second inaugural address, highlighted the importance of service and articulated America’s duty to care for the men and women who serve. More recently, Major General Thomas C. Seamands said, “It’s unprecedented. And now, the American people realize the national treasure we have in our sons and daughters serving in uniform.”<sup>3</sup> Servicemembers are an integral part of maintaining U.S. national security. Because the U.S. maintains an all-volunteer force, how it cares for these volunteers, both during and after their military service, matters.

The Department of Veterans Affairs, backed by a budget larger than the Department of State and Department of Homeland Security combined, is charged with carrying out this promise of post-service care. The VA keeps this promise in part by offering disability benefits to veterans who develop adverse health conditions or experience worsening of a pre-existing condition because of their time in service. For too many veterans, navigating the invisible ice of the VA is like charting the way through a

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excellent research assistance provided by Erik Kim and for the helpful comments from Jenna Breslin. Many thanks to the physicians, nurses, scientists, lawyers, and veterans’ advocates who provide immeasurable assistance to our nation’s current and former servicemembers. I am additionally thankful to former Soldier Jeff Danovich for sharing his experience with burn pit exposure. The opinions and positions expressed in this article belong to the author and are not the opinions, positions, thoughts, or ideas of the United States government, any branch of the United States military, the Department of Defense, or anyone else of any significance whatsoever.

1. *Induction Statistics*, SELECTIVE SERV. SYS., <https://www.sss.gov/history-and-records/induction-statistics/> [https://perma.cc/7BNA-34ZN] (last visited Jan. 12, 2022).

2. *Last Draftee Glad He’s Out*, N.Y. TIMES (May 31, 1982), <https://www.nytimes.com/1982/05/31/nyregion/last-draftee-glad-he-s-out.html> [https://perma.cc/A369-H3DC].

3. Alex Dixon, *July Marks 40th Anniversary of All-Volunteer Army*, U.S. ARMY (July 3, 2013), [https://www.army.mil/article/106813/july\\_marks\\_40th\\_anniversary\\_of\\_all\\_volunteer\\_army](https://www.army.mil/article/106813/july_marks_40th_anniversary_of_all_volunteer_army) [https://perma.cc/TU9P-ECFL].

labyrinth—disability benefits are realized only after overcoming a series of deferrals, delays, and dead ends. In this labyrinth, even lawyers are easily lost.

Perhaps the most well-known VA disability benefits are those given to veterans who served during the Vietnam War. These veterans were exposed to an herbicide commonly known as Agent Orange. Millions of gallons of Agent Orange and other toxins were sprayed in high-vegetation areas in Vietnam where these veterans served.<sup>4</sup> For years, these veterans fought the VA to have their conditions recognized as linked to Agent Orange. After denying thousands of claims, the VA now recognizes a host of health conditions linked to Agent Orange exposure including, but not limited to, leukemias, Hodgkin's disease, ischemic heart disease, early onset peripheral neuropathy, prostate cancer, and lung cancer.<sup>5</sup> An act of Congress, which became effective on February 6, 1991, has awarded service-connected VA disability benefits to hundreds of thousands of veterans who served in the Vietnam War era.<sup>6</sup> Their fight is mirrored in the Gulf War generation. Servicemembers with burn pit exposure experience familiar roadblocks when applying for VA disability benefits. The pump is now primed for a new wave of VA disability claims—claims based on burn pit exposure—the Agent Orange of the Gulf War generation.

The VA estimates that more than 3.5 million veterans who served during the Gulf War Era in places such as Afghanistan, Iraq, Kuwait, Djibouti, and Syria have been exposed to toxins released from pits wherein materials such as human and medical waste, hazardous chemicals, unexploded ordinance, metal, plastic, wood, and paint were burned.<sup>7</sup> Not surprisingly, a growing number of veterans say they have developed severe health complications because of their long-term exposure to burn pits. Former Sergeant Jeff Danovich is just one of thousands.

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4. Agent Orange was commonly used as an herbicide throughout Vietnam. It was made from 2, 4-D and 2,4,5-T. These are chlorinated phenoxy acids.

5. 38 U.S.C.S. § 1118. VA regulations list diseases that have been presumptively linked to Agent Orange. Additionally, veterans who were in Vietnam or served on its inland waterways during the Vietnam War are presumed by law to have been exposed to Agent Orange. The same is true for veterans who served in or near the Korean demilitarized zone or onboard C-123 aircraft. *See id.*

6. For the most up-to-date information related to Agent Orange exposure, visit [www.nvlsp.org](http://www.nvlsp.org).

7. *Burn Pit Veterans in the Dark on Coronavirus Risk*, VETERANS AUTHORITY (Apr. 3, 2020), <https://va.org/burn-pit-veterans-in-the-dark-on-coronavirus-risk/> [<https://perma.cc/RQP8-BWEJ>].

In 2004, while serving in Mosul, Iraq, as a Civil Affairs Specialist, Sergeant Danovich lived next to a large burning pit of trash and human waste.<sup>8</sup> The pit, which always reeked of jet propellant 8, was set ablaze twice a day every day during Sergeant Danovich's tour of duty, which lasted from January 2004 until October 2004.<sup>9</sup> The pits burned for up to 45 minutes at a time, and the smoke from the burn pit was so strong that it filled the metal storage containers that had been converted into living quarters—in short, there was no escape from the toxicity spewing into the air.<sup>10</sup>

The servicemembers in Mosul at that time were neither made aware of any potential health consequences, nor were they encouraged to wear masks; as such, memories of the burn pit had started to fade by August 2020 when Sergeant Danovich's primary care physician told him his white blood cell count was too high.<sup>11</sup> In December 2020, Sergeant Danovich was diagnosed with an incurable, rare cancer known as chronic lymphocytic leukemia (CLL), a cancer that usually affects people over 55 years of age and occurs in fewer than 200,000 U.S. persons per year. Sergeant Danovich was 48 years old when diagnosed.

Sergeant Danovich left the United States Army with an honorable discharge in 2009; although he has not donned Kevlar or laced up a combat boot in years, he is still fighting. To receive VA disability benefits for his CLL, Sergeant Danovich must first convince the VA that there is a link between his cancer and his burn pit exposure in Mosul, Iraq. Sadly, this is a fight that far too many veterans have already lost. The Department of Veterans Affairs has denied about 75% of veterans' burn pit claims for VA disability benefits.<sup>12</sup>

Part I of this article highlights the widespread use of burn pits during the Gulf War Era, their toxic impact on the human body, and the millions of servicemembers who have been exposed to them. Part II examines the legal framework the VA uses to determine whether servicemembers are eligible for VA disability benefits, including those for medical conditions linked to burn pit exposure. Additionally, Part II details the presumptive lists of conditions, based on legislation or regulations, created for servicemembers who were prisoners of war, served in Southwest Asia, or

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8. Interview with Former Sergeant Jeff Danovich (Jun. 9, 2021).

9. *Id.*

10. *Id.*

11. *Id.*

12. Kenzi Abou-Sabe, *Veterans Face Uphill Battle to Receive Treatment for 'Burn Pit' Exposure*, CBS NEWS (Apr. 12, 2021, 5:23 PM), <https://www.nbcnews.com/news/military/veterans-face-uphill-battle-receive-treatment-burn-pit-exposure-n1263862> [<https://perma.cc/QJ82-NZ4D>].

were exposed to Agent Orange in Vietnam. Part III sets forth medical and scientific research to help draw direct links from long-term burn pit exposure to conditions such as rare cancers. Additionally, Part III highlights the tools the VA is currently using to research burn pit exposure and the potential resulting medical conditions.

Part IV examines applications filed with the VA for disability benefits based on burn pit exposure, including the estimated number of filings, the length of time the VA takes to review each application, and the VA's approval rate. Part V analyzes the strengths and weaknesses of various proposed solutions: pending acts such as the K2 Veterans Care Act of 2021 and the Presumptive Benefits for Warfighters Exposed to Burn Pits and Other Toxins Act of 2021. Part V also discusses another avenue through which to effectuate positive change—rulemaking. Finally, Part V proposes an approach the VA should adopt to achieve veteran-friendly policies while simultaneously maintaining its budget.

## I. BURN PITS IN THE GULF WAR

### A. *Burn Pits Explained*

An open burn pit is an area of land used for open-air combustion of waste products such as chemicals, paint, medical and human waste, aluminum cans, Styrofoam, and plastics.<sup>13</sup> Per the Department of Defense (DOD), burn pits were commonly used to dispose of waste in areas such as Afghanistan and Iraq.<sup>14</sup> Although some burn pits are no longer in use, as late as 2019, the DOD acknowledged that there were nine active burn pits still in use overseas.<sup>15</sup> As such, as late as 2019, servicemembers were still being exposed to these pits of burning toxicity.

To justify continued use of burn pits, the DOD posits that burn pits are necessary because of several unique factors. These factors include: the short-term nature of contingency operations, limited disposal options in austere environments, and a lack of resources to fund engineered or planned landfills.<sup>16</sup> Although incinerators have been used successfully in

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13. U.S. DEP'T OF VETERANS AFFS., 10 THINGS TO KNOW: AIRBORNE HAZARDS AND BURN PIT EXPOSURE, [https://www.publichealth.va.gov/docs/exposures/AHBP\\_GeneralVeteranFactsheet\\_Final\\_508.pdf](https://www.publichealth.va.gov/docs/exposures/AHBP_GeneralVeteranFactsheet_Final_508.pdf) [<https://perma.cc/5DR8-CS4X>].

14. *Id.*

15. U.S. DEP'T OF DEF., OPEN BURN PIT REPORT TO CONGRESS 5 (2019), <https://www.acq.osd.mil/eie/Downloads/Congress/Open%20Burn%20Pit%20Report-2019.pdf> [<https://perma.cc/7AFR-WXFK>].

16. *Id.* at 3.

several locations, the DOD maintains that incinerators are not practical for use in all locations.<sup>17</sup>

### *B. Notorious Burn Pits*

One of the most notorious burn pits was located at an air base leased from the Uzbek government in southeastern Uzbekistan. Leased at no cost, Karshi Khanabad Air Base, commonly known by servicemembers as Camp Stronghold Freedom at K2, is a site formerly used by the Soviet Air Defense Force.<sup>18</sup> Long before American servicemembers arrived in 2001, the Soviets used K2 for dumping waste. K2 was conveniently located near the Afghani border, so it was leased despite known health hazards, including petrochemical contamination, particulate matter, and tetrachloroethylene, a manufactured chemical commonly used for dry cleaning.<sup>19</sup> Servicemembers from the Army, Air Force, and Marine Corps were stationed at K2; these servicemembers have described K2 as oozing with black sludge and emerald-green pond water.<sup>20</sup> Declassified DOD documents also detail these hazards, so they were well known.<sup>21</sup>

From the declassified documents discussed in the Open Burn Pit Report, it is clear the Pentagon knew as early as 2001 that servicemembers at K2 were exposed to a cornucopia of toxins,<sup>22</sup> some of which have arguably caused hundreds of cancer cases and dozens of deaths.<sup>23</sup> Former

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17. *Id.* at 4.

18. *U.S. Loses Key Base in Central Asia*, BBC NEWS (July 31, 2005), <http://news.bbc.co.uk/2/hi/asia-pacific/4732197.stm> [<https://perma.cc/7NRK-3CAJ>].

19. Steve Beynon, *DOD Knew K2 Troops Were Exposed to Cancer-Causing Toxins; VA Continues to Deny Care*, MILITARY.COM (July 10, 2020), <https://www.military.com/daily-news/2020/07/10/dod-knew-k2-troops-were-exposed-cancer-causing-toxins-va-continues-deny-care.html> [<https://perma.cc/BF7X-CJGH>] [hereinafter Beynon, *DOD Knew*].

20. *Id.*

21. HOUSE COMM. ON OVERSIGHT & REFORM, FACT SHEET: DECLASSIFIED K2 DOCUMENTS (2020), <https://oversight.house.gov/sites/democrats.oversight.house.gov/files/K2%20Document%20Fact%20Sheet.pdf> [<https://perma.cc/QV7G-TALP>] [hereinafter FACT SHEET: DECLASSIFIED K2 DOCUMENTS].

22. *Id.* As early as 2001, subsurface oil testing revealed elevated levels of volatile organic compounds and total petroleum hydrocarbons. *Id.* These toxins were found at various locations throughout the base, including a tent city where several servicemembers lived. *Id.*

23. *Id.*; see also Alex Horton, *Jon Stewart Urges Health-Care Law for Veterans Exposed to Toxic Burn Pits*, WASH. POST (Sept. 15, 2020), <https://www.washingtonpost.com/national-security/2020/09/15/jon-stewart-burn-pits-veterans/> [<https://perma.cc/4T6W-4AVV>].

servicemembers who were stationed at K2 testified on Capitol Hill that they were aware of at least 400 individuals who had served at the base and were diagnosed with cancers and at least 30 individuals who have died.<sup>24</sup> Their testimonies are disheartening given that several years after 2001, open fires were noted during a site inspection at K2.<sup>25</sup>

It certainly cannot be said that these servicemembers assumed the risk. As U.S. Air Force Master Sergeant Paul Widener, Jr. (ret.) testified before the U.S. House of Representatives Committee on Oversight and Reform on February 27, 2020: “K2 members were told repeatedly that no significant risk from hazards existed. . . . There were no briefings on toxic exposures, no protective equipment recommended, issued, or employed.”<sup>26</sup> The testimonies and documents are concerning. Also, the 2001, 2002, and 2004 K2 assessments discussed in the declassified K2 documents were declassified only three days before the Subcommittee held a hearing with K2 veterans to discuss K2’s toxic environment.<sup>27</sup>

The DOD concluded its Open Burn Pit Report to Congress by stating that the health and safety of servicemembers is paramount and prioritized.<sup>28</sup> Given this stance, it is shocking that K2 remained in use for so long and that K2 is not included in the VA’s current burn pit registry.<sup>29</sup> More shockingly, the VA has denied most VA disability claims related to burn pit exposure.<sup>30</sup>

The United States finally vacated Camp Stronghold Freedom at K2 in 2005 by way of eviction. In 2005, tensions between the United States and Uzbekistan were high.<sup>31</sup> Until this eviction, servicemembers rotated in and out of K2 for approximately four years. During this time, more than 7,000 servicemembers and other individuals called K2 home, at least temporarily.<sup>32</sup>

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24. Beynon, *DOD Knew*, *supra* note 19.

25. FACT SHEET: DECLASSIFIED K2 DOCUMENTS, *supra* note 21.

26. *Karshi-Khanabad: Hazardous Exposures and Effects on U.S. Servicemembers*, HOUSE COMM. ON OVERSIGHT & REFORM (Feb. 27, 2020), <https://oversight.house.gov/legislation/hearings/karshi-khanabad-hazardous-exposures-and-effects-on-us-servicemembers> [<https://perma.cc/8DVK-KNVS>].

27. FACT SHEET: DECLASSIFIED K2 DOCUMENTS, *supra* note 21.

28. U.S. DEP’T OF DEF., *supra* note 15.

29. FACT SHEET: DECLASSIFIED K2 DOCUMENTS, *supra* note 21. The VA established the burn pit registry in 2014 as a self-reporting data collection tool, which is discussed in more detail in *infra* Part III.

30. Kenzi Abou-Sabe, *supra* note 12.

31. FACT SHEET: DECLASSIFIED K2 DOCUMENTS, *supra* note 21.

32. Beynon, *DOD Knew*, *supra* note 19.

The largest operating burn pit was at Joint Base Balad (JBB), a U.S. base in Iraq. This burn pit “may have exposed tens of thousands of troops, contractors, and Iraqis to cancer-causing dioxins, poisons such as arsenic and carbon monoxide, and hazardous medical waste.”<sup>33</sup> The Institute of Medicine (IOM) estimates that each burn pit at JBB burned approximately ten tons of waste per day.<sup>34</sup>

Per a 2010 Army Institute of Public Health study of burn pits in Iraq and Afghanistan, the waste at large bases like JBB contained combustible and non-combustible materials, plastics, metals, and wood.<sup>35</sup> The IOM committee analyzed 51 air pollutant samples collected from JBB in 2007 and 2009 to assess potential long-term health effects.<sup>36</sup> The committee found three major classes of chemicals—polychlorinated dibenzo-dioxins (PCDD/Fs), volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs), and particulate matter (PM)—and the committee noted that these chemicals have long-term negative health effects.<sup>37</sup>

Specifically, PCDD/F has tetrachlorodibenzo-p-dioxin (TCDD) as its congener and is known to contribute to soft-tissue sarcoma, non-Hodgkin’s lymphoma, Hodgkin’s disease, and chronic lymphocytic leukemia.<sup>38</sup> Although these chemicals were part of the air pollutants detected at JBB and analyzed by the IOM committee, it was difficult to tie the origin of the pollutants specifically to burn pits at JBB.<sup>39</sup> With this study, there is unfortunately a lack of data needed to conduct an exposure assessment, so the predictive value is unknown.<sup>40</sup> This study is discussed further in Part III, below.

A study published in 2007 attempted to identify the sources of PAH, PCDD, and polychlorinated dibenzofurans (PCDF) previously found at Joint Base Balad. Notably, by comparing the concentration ratios of these compounds with literature data, this study identified the source of PCDD and PCDFs as the burn pit.<sup>41</sup> This study evaluated samples collected from

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33. INST. OF MED., LONG-TERM HEALTH CONSEQUENCES OF EXPOSURE TO BURN PITS IN IRAQ AND AFGHANISTAN 3 (2011) [hereinafter INST. OF MED., LONG-TERM HEALTH].

34. *Id.*

35. *Id.*

36. *Id.* at 5.

37. *Id.*

38. *Id.*

39. *Id.*

40. *Id.*

41. Mauro Masiol et al., Abstract, *Airborne Dioxins, Furans, and Polycyclic Aromatic Hydrocarbons Exposure to Military Personnel in Iraq*, 58 J. OCCUP. ENV’T MED. 1 (2016).

five sampling sites between January 2007 and November 2007. These sites included: (1) a mortar pit; (2) a guard tower; (3) a transportation field; (4) H-6 housing; and (5) a contingency aeromedical staging facility.<sup>42</sup> The samples were analyzed in accordance with the Environmental Protection Agency's Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, namely, methods TO-9A and TO-13A.<sup>43</sup> The Compendium contains a set of 17 peer-reviewed and standardized methods for air pollutants.<sup>44</sup>

In this study, “[t]he total (particulate + gaseous phase) concentrations of polychlorinated dibenzo-dioxins (PCDDs), -furans (PCDFs) and polycyclic aromatic hydrocarbons (PAHs) were quantified.”<sup>45</sup> The researchers found high levels of gas and particulate phase organics at JBB. The ratios among PAH congeners and PAH to PCDD/F ratios aligned with data from the open burning of simulated military waste. In this way, the source of PCDD and PCDF could be identified as the burn pits at JBB. The link between long-term burn pit exposure and adverse health conditions will be explored more in Part III.

In short, the VA should expect a steady increase in claims for VA disability benefits from veterans who served near burn pits. Part II details the difficulties veterans face when applying for VA disability benefits, specifically compensation. This Part also highlights the importance of and need for presumptions, which make applying for and receiving VA disability benefits easier.

## II. VA DISABILITY BENEFITS

To fully understand and appreciate the difficulties servicemembers face when applying for VA disability benefits, one must first learn the basic principles of the VA disability benefits program. There are several types of VA benefits, although this article refers specifically to VA disability benefits in the form of compensation. VA disability compensation is a monthly, tax-free payment made to veterans who got

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42. *Id.* at 4.

43. *Id.*

44. ENV'T PROT. AGENCY, OFF. OF RSCH. & DEV., EPA/625/R-96/010b, COMPENDIUM OF METHODS FOR THE DETERMINATION OF TOXIC ORGANIC COMPOUNDS IN AMBIENT AIR (2d ed. 1999), <https://www.epa.gov/sites/production/files/2019-11/documents/tocomp99.pdf> [<https://perma.cc/E745-5RNG>].

45. Masiol et al., *supra* note 41, at 3.

sick, injured, or had a pre-existing condition that was made worse during their time in service.<sup>46</sup>

*A. Who is a Veteran?*

A servicemember must first meet the VA's eligibility criteria, including the definition of "veteran," to obtain VA disability benefits. The VA defines a "veteran" as one "who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable."<sup>47</sup> Although the word "active" is used in the VA's definition, members of the Reserve and Air or Army National Guard may, under certain circumstances, qualify as veterans for the purpose of obtaining VA disability benefits.<sup>48</sup> Military service, as used by the VA, includes service in the Public Health Service, the National Oceanic and Atmospheric Administration, or Environmental Science Services Administration.<sup>49</sup> After the requisite military, naval, or air service is established, the servicemember must then establish that this service was active — a burden of particular importance to reservists and guardsmen.<sup>50</sup>

The word "active" as used by the VA has a specific definition. For eligibility purposes, the VA considers full-time duty in the armed forces as active service.<sup>51</sup> Guardsmen and reservists, however, may also have service time that qualifies as active. A reservist or guardsmen who completes a twelve-month tour of duty in Iraq, for instance, had active-duty service during that time.<sup>52</sup> For guardsmen, their service time must have been for federal purposes—that is, they were not activated under Title 32 authority.<sup>53</sup> If, for example, the governor of a state activates a

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46. *VA Disability Compensation*, U.S. DEP'T OF VETERANS AFFS., [va.gov/disability/](https://www.va.gov/disability/) (last visited Oct. 24, 2021).

47. 38 U.S.C.S. § 101(2); 38 C.F.R. § 3.1(d) (2021).

48. 38 U.S.C.S. § 101(24); 38 C.F.R. § 3.1(b) (2021).

49. 38 U.S.C.S. § 101(21)(B) (there are additional qualifications for those who served in the Public Health Service); 38 C.F.R. §§ 3.6(b)(2), 3.7(q) (2021); *see also* 38 U.S.C.S. § 101(21)(C) (there are additional qualifications for those who served in the National Oceanic and Atmospheric Administration or Environmental Science Services Administration).

50. BARTON F. STICHMAN ET AL., *VETERANS BENEFITS MANUAL 24–25* (2020).

51. 38 U.S.C.S. § 101(21)(A).

52. *See* 38 U.S.C.S. § 101(21)(A); 38 C.F.R. § 3.6(b)(1) (2021).

53. For entitlement to VA benefits, Guardsmen must have been activated under Title 10 of the U.S. Code. *See Qualifying National Guard Service Under 10 U.S.C.*, U.S. DEP'T OF VETERANS AFFS. COMPENSATION AND PENSION MANUAL M21-1, Part III.i.1.A(4)(d), <https://www.knowva.ebenefits.va.gov/>

guardsman to assist with hurricane relief efforts, this service time would not qualify as active for purposes of VA disability benefits, as this service would be per Title 32 authority.<sup>54</sup>

### B. Characterization of Service

Once a servicemember meets the first part of the VA's definition of veteran by showing active military, naval, or air service, the servicemember must also show that he or she received a discharge or release from the military under conditions other than dishonorable.<sup>55</sup> Here, the VA's language does not directly correspond to the language used by the military.<sup>56</sup> Upon discharge from service, the military assigns a characterization of the service. There are several characterizations available, including but not limited to: honorable, under other than honorable conditions, general under honorable conditions, bad conduct, and dishonorable.<sup>57</sup>

The Department of Veterans Affairs always finds that someone with a dishonorable characterization of service, or dishonorable discharge, was discharged under dishonorable conditions.<sup>58</sup> This dishonorable characterization results from a court-martial, and any discharge by reason of a sentence of a general court-martial is a statutory bar to VA benefits.<sup>59</sup> In short, it is challenging to determine, for the VA's purposes, whether a servicemember was discharged or released under conditions other than dishonorable.

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system/templates/selfservice/va\_ssnew/help/customer/locale/en-US/portal/55440000001018/content/554400000181424/M21-1-Part-III-Subpart-i-Chapter-1-Section-A-Establishing-Veteran-Status#4d [https://perma.cc/G5VF-Y7YP] (last visited Mar. 2, 2022).

54. See *Allen v. Nicholson*, 21 Vet. App. 54, 55–56 (2007). Particularly relevant for reservists, the VA might consider their service time as active even if they were on active duty for training. Active duty for training, or ADT, is a duty type often used by reservists to train and includes annual training, initial active duty for training, and other training duty. See DEP'T OF DEF., DoDI 1215.06, UNIFORM RESERVE, TRAINING, AND RETIREMENT CATEGORIES FOR THE RESERVE COMPONENTS 11 (2014). Active duty for training is considered *active* service if, while on ADT, the servicemember was disabled or died from a disease or injury incurred or aggravated in the line of duty. 38 U.S.C.S. § 101 (24)(B).

55. 38 U.S.C.S. § 101(2); 38 C.F.R. § 3.12(a) (2021).

56. STICHMAN ET AL., *supra* note 50, at 30.

57. *Id.*

58. 38 U.S.C.S. § 5303(a); 38 C.F.R. § 3.12(c)(2) (2021).

59. *Id.*

The Department of Veterans Affairs also considers any statutory or regulatory bars to benefits, special considerations, and exceptions.<sup>60</sup> It is possible for a servicemember with an honorable discharge to be ineligible for VA disability benefits because Congress has barred an award of disability benefits.<sup>61</sup> For instance, if a servicemember received an honorable discharge as a conscientious objector because he or she refused to perform military duty, there is a statutory bar to VA disability benefits.<sup>62</sup> Regulatory bars are also used. Assuming a servicemember received a discharge under other than honorable conditions, the VA would consider the discharge as having been issued under dishonorable conditions if the conduct upon which it is based was an offense involving moral turpitude.<sup>63</sup> Under this example, there is a regulatory bar to receiving VA disability benefits.<sup>64</sup>

The Department of Veterans Affairs also considers whether the insanity exception applies.<sup>65</sup> If there is a statutory or regulatory bar to VA disability benefits, a servicemember may establish that, at the time of the offense, he or she was insane.<sup>66</sup> The insanity must have existed at the time of the offense that led to the discharge.<sup>67</sup> For this exception to apply, the servicemember must have a medical opinion stating that the servicemember was insane, as this term is defined by VA.<sup>68</sup> If there is a statutory or regulatory bar to VA disability benefits, and this exception is successfully applied, the servicemember may be eligible for benefits.<sup>69</sup>

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60. STICHMAN ET AL., *supra* note 50, at 31–34.

61. 38 U.S.C.S. § 5303(a).

62. *Id.*; 38 C.F.R. § 3.12(c)(1)–(6) (2021); *see also* STICHMAN ET AL., *supra* note 50, at 31 (setting forth a list of several statutory bars).

63. An offense generally involves moral turpitude if it is unlawful, willful, committed without justification, and is an offense a reasonable person would expect to cause harm. Service Requirements for Veterans, 69 Fed. Reg. 4819, 4827, 4838 (proposed Jan. 30, 2004) (to be codified at 38 C.F.R. pt. 5).

64. There is an exception: the servicemember in this example may receive VA health care for any disability incurred or aggravated during active service in the line of duty, assuming the period of service during which the disability was incurred or aggravated was not terminated by a bad conduct discharge. *See* STICHMAN ET AL., *supra* note 50, at 33.

65. *Id.* at 33–34.

66. 38 U.S.C.S. § 5303(b).

67. *Gardner v. Shinseki*, 22 Vet. App. 415, 421 (2009). Whether the servicemember understood right from wrong is not material to this determination. *Id.* at 420.

68. *Struck v. Brown*, 9 Vet. App. 145, 155 (1996).

69. *See* STICHMAN ET AL., *supra* note 50, at 33–34.

Whenever there is an indication that a servicemember was discharged under dishonorable conditions, the VA will conduct a character-of-service determination. The Department of Veterans Affairs conducts this determination when the military has characterized a servicemember's service as less than honorable, for example, when a servicemember has an under other than honorable or dishonorable discharge. Of course, as explained above, sometimes there is a statutory bar to VA disability benefits even in the case of an honorable discharge.

During a character-of-service determination, the VA reviews the quality of the servicemember's service and the circumstances surrounding the discharge.<sup>70</sup> Too often, military records are lacking, and servicemembers are at a loss while attempting to put together the puzzle pieces. The process is so complex and confusing that in 2018, Congress enacted the Consolidated Appropriations Act. Per this statute, if the VA decides a servicemember is not eligible for benefits because of their characterization of service, then the Secretary shall give the servicemember information about the member's ability to address the condition.<sup>71</sup> Clearly, meeting the VA's definition of "veteran" and proving release from the military under conditions other than dishonorable is not a small task.<sup>72</sup>

For VA disability compensation, assuming a servicemember meets the VA's definition of "veteran," it does not matter if the veteran served in wartime or peacetime. Additionally, there is no length-of-service requirement for those with service prior to September 8, 1980, or for those with service after September 8, 1980, assuming they are seeking VA disability compensation because of a service-connected disability.<sup>73</sup> Notably, even if one meets the VA's definition of "veteran," the servicemember cannot receive VA disability compensation for an injury or disease that resulted from the servicemember's own willful misconduct.<sup>74</sup>

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70. *Id.* at 35–36.

71. Consolidated Appropriations Act 2018, Pub. L. No. 115-141, § 259, 132 Stat. 348 (codified at 38 U.S.C.S. § 5303B(a)).

72. *See generally* STICHMAN ET AL., *supra* note 50, at 23–44 (detailing the intricacies involved with proving oneself a veteran).

73. *See* 38 U.S.C.S. § 5303A(b)(2); *see also* 38 U.S.C.S. § 5303A(b)(3)(C). For those that served exclusively after September 8, 1980, there is a length-in-service requirement for some VA benefits such as the non-service-connected disability pension. *See* 38 U.S.C.S. § 5303A; 38 C.F.R. § 3.12(a) (2021).

74. 38 U.S.C.S. §§ 105(a), 1110; 38 C.F.R. § 3.301(a) (2021).

*C. Service Connection and Caluza*

After a servicemember meets the VA's definition of "veteran," the servicemember is entitled to VA disability compensation if he or she had a disease or injury that was incurred or aggravated in the line of duty and the disability was not a result of their own willful misconduct, such as alcohol or drug abuse.<sup>75</sup> In other words, there is a service-connected disability. As stated above, veterans entitled to VA disability compensation receive tax-free monthly payments. As of December 1, 2020, a single veteran with no dependents and a service-connected condition with a 100% disability rating receives \$3,146.42 monthly.<sup>76</sup> Other compensation benefits, such as dependency and indemnity compensation, might be paid to surviving spouses, children, and parents of deceased veterans if a service-connected condition caused the veteran's death.<sup>77</sup>

If the VA determines that a disability or death was incurred in, aggravated during, or otherwise caused in the line of duty, the VA deems the disability or death to be service connected.<sup>78</sup> The phrase "in the line of duty" means an injury or disease was incurred or aggravated during a period of active service.<sup>79</sup> For clarity, the U.S. Court of Appeals for the Federal Circuit has said "service-connected" means the same as incurred "in the line of duty."<sup>80</sup>

Ultimately, a veteran must satisfy the three *Caluza*<sup>81</sup> elements to obtain service-connected VA disability compensation. A veteran must show competent evidence of a current disability, an in-service incurrence or aggravation of a disease or injury, and a clear nexus between the in-service incurrence or aggravation and the current disability.<sup>82</sup>

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75. 38 U.S.C.S. §§ 105(a), 1110.

76. See 38 U.S.C.S. § 1114; see also *2021 Veterans Disability Compensation Rates*, U.S. DEP'T OF VETERANS AFFS., <https://www.va.gov/disability/compensation-rates/veteran-rates/> [<https://perma.cc/8WMC-2D67>].

77. STICHMAN ET AL., *supra* note 50, at 60.

78. 38 U.S.C.S. § 101(16); 38 C.F.R. §§ 3.1(k), 3.303(a) (2021).

79. Active service includes active duty, active duty for training if a servicemember was disabled or died from a disease or injury incurred or aggravated in the line of duty, and any period of inactive duty training during which the servicemember was disabled or died from an injury incurred or aggravated in the line of duty. 38 U.S.C.S. § 101(24).

80. *Shedden v. Principi*, 381 F.3d 1163, 1166 (Fed. Cir. 2004).

81. See *Caluza v. Brown*, 7 Vet. App. 498 (1995).

82. See *Caluza*, 7 Vet. App. at 506; see also STICHMAN ET AL., *supra* note 50, at 66 (detailing the fundamental requirements for obtaining service connection).

As to the first requirement, veterans are not eligible for disability compensation simply because they experienced an injury or disease at some point while serving in the military.<sup>83</sup> Again, the veteran must have a current disability, which usually requires competent evidence in the form of clear medical records. The Department of Veterans Affairs defines this evidence as evidence from a person qualified to make diagnoses, statements from medical treatises, and statements in medical and scientific articles and research reports.<sup>84</sup>

The second element requires an in-service connection. A veteran must submit evidence that the disease or injury at issue happened during the veteran's time in service.<sup>85</sup> A veteran may use either lay or medical evidence, although medical evidence is stronger.<sup>86</sup> Here, the VA uses an as-likely-as-not standard.<sup>87</sup> A veteran's evidence must show a 50% chance that the disease, injury, or aggravation of the same happened in service.<sup>88</sup> Additionally, the VA weighs the evidence in the veteran's favor.<sup>89</sup> This is commonly called the benefit-of-the-doubt standard.

To illustrate, Veteran Doe is seeking compensation for arthritis in her right wrist, which is caused by an injury she suffered while performing the push-up portion of the annual physical fitness test.<sup>90</sup> Veteran Doe would generally need to submit evidence of the in-service injury to the VA. To establish an in-service connection, she might provide the VA with: a copy of her orders, if, for example, she was a reservist or guardsman on ADOS orders during her physical fitness test; a copy of her medical records from the day of the injury, assuming she was treated by a healthcare professional the day of the injury; and it would benefit her to submit a personal statement regarding the alleged injury and statements from any servicemembers who witnessed the injury. Using documents like these,

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83. See *Brammer v. Derwinski*, 3 Vet. App. 223, 225 (1992).

84. 38 C.F.R. § 3.159(a)(1) (2021).

85. STICHMAN ET AL., *supra* note 50, at 84–85.

86. 38 U.S.C.S. § 5107(b); 38 CFR § 3.102 (2021).

87. *Id.*

88. STICHMAN ET AL., *supra* note 50, at 85.

89. 38 U.S.C.S. § 5107(b).

90. Servicemembers across all branches of the armed forces typically complete one or two physical fitness tests per year to maintain service requirements. A servicemember must be serving in a valid duty status to perform a scored and official physical fitness test. See also STICHMAN ET AL., *supra* note 50, at 85 (setting forth another example).

Veteran Doe should be able to establish the necessary in-service connection.<sup>91</sup>

While some veterans meticulously maintain service records, most do not. For others, like veterans of World War II and the Korean Conflict, proving in-service events is unusually challenging. In 1973, a fire at the National Personnel Records Center in St. Louis, Missouri, destroyed tens of thousands of service treatment records.<sup>92</sup> These veterans must submit alternate evidence such as lay statements.

#### *D. Favorable Presumptions to Establish Service Connection*

Some veterans benefit from presumptions—which make it easier to prove an in-service event, especially for those with lost, incomplete, or destroyed service records.<sup>93</sup> Per regulations, for example, the VA presumes that Vietnam War veterans were exposed to Agent Orange while in service, and there is a list of presumed conditions based on this presumed Agent Orange exposure.<sup>94</sup> Another presumption is that veterans who were held as prisoners of war were presumably exposed to traumatic events during their military service, which makes it easier for these veterans to link post-traumatic stress to their military service.<sup>95</sup>

Unfortunately, the Department of Veterans Affairs is slow to adopt presumptions that favor veterans. For years, Vietnam War veterans and their family members voiced their mounting concerns related to Agent Orange exposure as these veterans suffered a myriad of diseases and other adverse health conditions. On February 6, 1991, more than 15 years after NVA tanks rolled through the gate of the Presidential Palace in Saigon, effectively ending the Vietnam War, Congress finally directed the

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91. The VA should not deny a veteran's lay statements about an in-service event because the service records do not support the veteran's statements. *See Jandreau v. Nicholson*, 492 F.3d 1372, 1377 (Fed. Cir. 2007) (in certain situations, lay persons are competent to make a diagnosis); *see also Buchanan v. Nicholson*, 451 F.3d 1331, 1336 (Fed. Cir. 2006) (lay statements about symptoms cannot be rejected because they are not supported by medical records).

92. STICHMAN ET AL., *supra* note 50, at 1657.

93. *See generally id.* at 147–53.

94. 38 C.F.R. § 3.307(a)(6)(iii) (2021). Vietnam War veterans must show that they set foot on Vietnam land or were in the territorial waters of Vietnam to benefit from the presumption. *See Procopio v. Wilkie*, 913 F.3d 1371 (Fed. Cir. 2019).

95. 38 C.F.R. § 3.304(f) (2021).

Secretary of Veterans Affairs to request the National Academy of Sciences to conduct a comprehensive review regarding Agent Orange exposure.<sup>96</sup>

Based on the findings of this study, the VA developed two presumptions in favor of Vietnam War veterans. Veterans who set foot in the Republic of Vietnam or served on its inland waterways or territorial waters from January 9, 1962, to May 7, 1975, are presumed to have had Agent Orange exposure,<sup>97</sup> which makes it easier to prove an in-service event. Additionally, the VA lists all the diseases that have been presumptively linked to Agent Orange exposure, which makes it easier to meet the third and final requirement for VA disability benefits, a valid nexus.<sup>98</sup>

The third element that a veteran must meet before obtaining VA disability compensation is demonstration of a nexus or link between the current disability (the first element) and the in-service event (the second element).<sup>99</sup> In other words, a veteran must demonstrate that the disability is service connected. If a VA application for disability compensation is denied, it is usually because there is a missing link between the first and second required elements.<sup>100</sup> Often, it is difficult for veterans to produce medical records to meet the as-likely-as-not standard previously mentioned.

Based on the author's practice experience, it seems the VA only acknowledges a nexus if there is a favorable Compensation and Pension Exam, a favorable Disability Benefits Questionnaire, or a letter written by a treating physician stating that the condition or illness was more likely than not caused by service. It should be noted, however, that a veteran's claim might still be denied if the VA has not recognized a link between the condition or illness and the in-service event, like burn pit exposure. In short, the VA's standard is exceptionally high.

Take, for an example, a veteran whose diagnosed condition manifests after his or her time in service. In this case, the veteran's in-service treatment records would not reflect an in-service manifestation. If there is a presumption, this substitutes for the nexus evidence otherwise required.<sup>101</sup> Because of the established and favorable presumptions, thousands of Vietnam War veterans have been able to overcome the sometimes insurmountable obstacle known as the nexus requirement.

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96. Agent Orange Act of 1991, Pub. L. No. 102-4, 105 Stat. 11; *see also* 38 U.S.C.S. § 1116.

97. 38 U.S.C.S. § 1116(a)(1)(A).

98. 38 U.S.C.S. § 1118.

99. STICHMAN ET AL., *supra* note 50, at 66.

100. *Id.* at 109.

101. *Id.* at 139.

Rather than show that there is a direct link or causation between the current disability and an in-service event, these veterans benefit from a presumptive service connection.<sup>102</sup>

The two presumptions created in favor of Vietnam War veterans were developed after the Institute of Medicine committee found evidentiary links between Agent Orange and adverse health conditions. The IOM finally made recommendations to resolve scientific uncertainties after years of heightened concerns about Agent Orange and a growing number of Vietnam veterans developed cancer or fathered handicapped children.<sup>103</sup> In prior years, thousands of studies had been conducted, yet the VA failed to formally acknowledge the adverse health effects of Agent Orange, and Vietnam veterans went without redress. Shockingly, U.S. military forces sprayed almost 19 million gallons of herbicides over approximately three million acres in Vietnam.<sup>104</sup> Agent Orange accounted for about 11 million gallons of the herbicides sprayed.<sup>105</sup>

Presumptive conditions are created in one of two ways: the VA may create a list of presumed conditions through regulations, as with the Code of Federal Regulations, or Congress may establish a presumptive conditions list through legislation.<sup>106</sup> One such act is the Persian Gulf War Veterans Act of 1998, which established procedures for the creation of presumptions related to service in the Persian Gulf War.<sup>107</sup> This act required a positive association between exposure in service and a diagnosed or undiagnosed illness in humans or animals.<sup>108</sup> To establish a positive association, the VA contracted with the National Academy of Sciences (NAS). The NAS conducted studies on connections between

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102. 38 C.F.R. § 3.303 (2021). In cases of presumptive service connection, the disability did not manifest during service but is presumed to have started or be linked to an in-service event because of a statute or VA regulation.

103. INST. OF MED., VETERANS AND AGENT ORANGE: HEALTH EFFECTS OF HERBICIDES USED IN VIETNAM 1 (1994) [hereinafter INST. OF MED., VETERANS AND AGENT ORANGE].

104. *Id.*

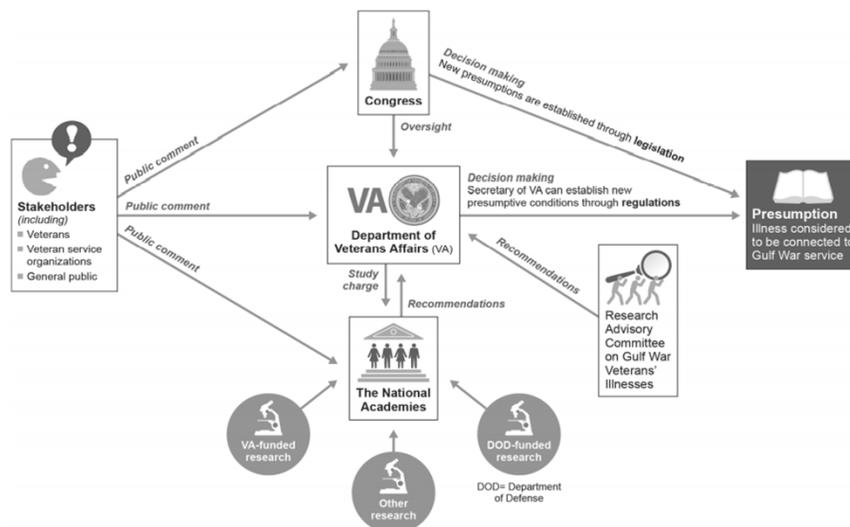
105. *Id.*

106. U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-253T, VA DISABILITY BENEFITS: PROCESS FOR IDENTIFYING CONDITIONS PRESUMED TO BE SERVICE CONNECTED AND CHALLENGES IN PROCESSING COMPLEX GULF WAR ILLNESS CLAIMS 3 (2020).

107. Persian Gulf War Veterans Act of 1998, Pub. L. No. 102-585, 106 Stat. 4943; Veteran's Benefits Improvements Act of 1994, Pub. L. No. 103-446, 108 Stat. 4645.

108. INST. OF MED., IMPROVING THE PRESUMPTIVE DISABILITY DECISION-MAKING PROCESS FOR VETERANS 80 (Jonathan M. Samet & Catherine C. Bodurow eds., 2008).

veterans' symptoms and their time in service within the Persian Gulf area.<sup>109</sup> Again, a presumptive list of conditions is beneficial because it exempts veterans from having to prove that their symptoms are connected to their time in service. A chart from the Government Accountability Office illustrates how presumptions are established:<sup>110</sup>



Source: GAO analysis of agency documents and information from VA officials. | GAO-21-253T

In 1991, Congress enacted the Agent Orange Act to protect Vietnam War veterans suffering from conditions linked to Agent Orange. In 1992, after Congress enacted the Agent Orange Act of 1991, the IOM began to summarize and review the, by then, wealth of scientific evidence regarding Agent Orange and adverse health conditions.<sup>111</sup> The IOM made note of specific health conditions such as cancer and explained that assessing Agent Orange's relationship to cancer is difficult because more than 30% of Americans will develop cancer at some point in their lives, and in 1992, Vietnam War veterans were mostly under 50 years old, still young when considering cancer development.<sup>112</sup> Further complicating matters, the IOM had to consider the possibility of error, bias, confounding, and chance links within the different scientific studies—factors that affect a true association between herbicides and adverse health effects.

109. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 106, at 6–7.

110. *Id.* at 7.

111. INST. OF MED., VETERANS AND AGENT ORANGE, *supra* note 103, at 1.

112. *Id.* at 8.

To overcome these difficulties, the IOM considered any statistical association with a specified adverse condition, and it examined the association among Vietnam War veterans. It questioned the rate of occurrence of an adverse condition in Vietnam War veterans who were actually exposed to herbicides, the rate for those who were not exposed, and the degree to which any other differences between exposed and unexposed groups influenced the difference in rates.<sup>113</sup> IOM also created categories of association: sufficient evidence of an association; limited evidence of an association; limited evidence of no association; and inadequate evidence to determine whether an association exists.<sup>114</sup> The IOM estimated the herbicide exposure in Vietnam War veterans through self-reports, records-based measures, combat experience, and military occupational specialty.<sup>115</sup>

In 1994, after an extensive review period, the IOM Committee identified several health conditions with likely or possible associations with herbicide or TCDD exposure.<sup>116</sup> If data was insufficient in a certain area of study, the IOM stated this in its 1994 report. Given the remaining scientific uncertainties at that time, the IOM recommended further research efforts. Specifically, the IOM recommended the use of a non-governmental organization with appropriate experience to develop and test models of herbicide exposure.<sup>117</sup> Additionally, the Agent Orange Act of 1991 called for the NAS to conduct subsequent reviews every two years for a period of ten years from the date of its first report. Subsequent reports solidified an association between Agent Orange and certain adverse health conditions, while some associations remained unknown.<sup>118</sup>

As a result of the Agent Orange Act of 1991, and the IOM's subsequent findings, hundreds of thousands of veterans who served during the Vietnam War have received VA disability compensation since 1991. During the 1970s and 1980s, however, the VA denied tens of thousands of claims attributed to Agent Orange exposure. These veterans were collateral damage in the fight for scientific and medical research strong enough to convince the VA of Agent Orange's adverse health consequences.

As of 2020, the IOM has issued 11 reports regarding the health consequences of Agent Orange. Because of these reports, the VA has

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113. *Id.*

114. *Id.*

115. *Id.* at 6.

116. *Id.* at 12.

117. *Id.*

118. For instance, the 1996 report strengthened the association between TCDD and the peripheral nervous system. *Id.* at 3.

added several diseases to its presumptive list of conditions linked to Agent Orange exposure. Today, the Health and Medicine Division of the National Academy of Sciences continues to study links between Agent Orange and adverse health conditions.<sup>119</sup>

For Vietnam War veterans, the first step in qualifying for VA disability compensation includes proving their Agent Orange exposure. Again, because of the presumption in place, the VA presumes that veterans were exposed to Agent Orange if they set foot in Vietnam between January 9, 1962, and May 7, 1975; served along the Korean demilitarized zone; or worked on C-123 airplanes that sprayed Agent Orange.<sup>120</sup> If this presumption does not apply, veterans have the option to prove direct exposure to Agent Orange.

The second step for Vietnam War veterans is to show that they currently have a disease on the VA's presumptive list of conditions and are at least 10% disabled because of the disease on the presumptive list. If the disease is not cancer, sometimes the veteran must also show that the disease developed within one year from the last day of Agent Orange exposure.<sup>121</sup> The list is expansive and includes conditions such as: bronchus cancer, lung cancer, Hodgkin's disease, non-Hodgkin's lymphoma, Type 2 diabetes, certain birth defects in children of female Vietnam veterans,<sup>122</sup> AL amyloidosis, and Parkinson's disease.<sup>123</sup>

The presumption that Agent Orange caused a veteran's condition is rebuttable. In other words, the VA may collect evidence to refute the presumption of service connection.<sup>124</sup> When the VA collects evidence, it must gather such evidence in an impartial and neutral way.<sup>125</sup> If a veteran, for example, submits medical records stating that he or she has been taking medication for a non-service-connected disease and that this medication is

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119. See *Health and Medicine Division Reports on Agent Orange*, DEP'T OF VET. AFFS. (2021), <http://www.publichealth.va.gov/exposures/agentorange/publications/health-and-medicine-division.asp> [<https://perma.cc/96JL-JHKU>].

120. See 28 U.S.C.S. § 1116(a); 38 C.F.R. §§ 3.307(a)(6), 3.309(e) (2021).

121. For example, based on an IOM report, peripheral neuropathy must manifest within one year of the last date of Agent Orange exposure. If not, a veteran with peripheral neuropathy is unable to take advantage of VA's list of presumed conditions from Agent Orange exposure. Of course, the veteran has the option to nonetheless prove a direct link between their Agent Orange exposure and peripheral neuropathy. See *Disease Associated with Exposure to Certain Herbicide Agents: Peripheral Neuropathy*, 78 Fed. Reg. 54,764, 766 (Sept. 7, 2013) (to be codified at 38 C.F.R. pt. 3).

122. 38 C.F.R. § 3.815 (2021).

123. The full list of diseases appears in 38 C.F.R. § 3.309(e) (2021).

124. *Douglas v. Shinseki*, 23 Vet. App. 19, 24 (2009).

125. *Id.* at 25.

likely to cause the condition for which the veteran is seeking a service connection, then the VA will examine this further.<sup>126</sup>

Because scientific and medical research is still being conducted, sometimes new conditions are added to the list of conditions presumptively caused by Agent Orange. Although the Vietnam War ended more than 30 years ago, three new conditions were added to the VA's presumptive list in 2021. Per the 2021 National Defense Authorization Act, these conditions include: bladder cancer, hypothyroidism, and Parkinson's-like symptoms.<sup>127</sup> In other words, until 2021, veterans with Agent Orange exposure and one or more of these three conditions had to prove direct service connection, an arduous task, rather than benefit from a presumed service connection.

Unfortunately, while the VA and the medical and science communities have spent decades uncovering enough evidence to indisputably tie adverse health conditions to Agent Orange exposure, thousands of Vietnam War veterans suffered. The VA should learn from its mistakes—servicemembers who have been exposed to burn pits and suffer adverse health consequences should not have to wait decades for redress.

The Department of Veterans Affairs has been slow to create presumptions for servicemembers other than Vietnam War veterans. For example, thousands of servicemembers called Camp Lejeune home from its establishment in 1942 until 40 years later, in 1982, when the Marine Corps discovered VOCs in the drinking water provided by two water treatment plants. Per the CDC's Agency for Toxic Substances and Disease Registry (ATSDR), water from the Tarawa Terrace water treatment plant was contaminated by Tetrachloroethylene (PCE).<sup>128</sup> Additionally, water from the Hadnot Point treatment plant was contaminated by Trichloroethylene (TCE) and other contaminants, including PCE and benzene.<sup>129</sup> Supply wells were contaminated by, among other sources, leaking underground storage tanks and waste disposal sites.<sup>130</sup> Ultimately, the ATSDR determined that past exposures from the 1950s through 1985

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126. *See id.* at 26 (allowing VA to seek additional medical examinations and opinions where the subject condition has another potential cause).

127. Nat'l Def. Authorization Act for Fiscal Year 2021, H.R. 6395, 116th Cong. (2020).

128. *See Camp Lejeune, North Carolina*, AGENCY FOR TOXIC SUBSTANCES & DISEASE REG. (Jan. 16, 2014), <https://www.atsdr.cdc.gov/sites/lejeune/background.html> [<https://perma.cc/C83T-5EY3>].

129. *See id.*

130. *See id.*

likely caused an increased risk in multiple cancers and adverse birth outcomes.<sup>131</sup>

Now, a presumption of service connection exists for veterans, including reservists and guardsmen, who served at Camp Lejeune for at least 30 days between August 1, 1953, and December 31, 1987.<sup>132</sup> The Department of Veterans Affairs formulated this presumption as a result of scientific studies about the potential adverse health consequences from exposure to chemicals in individuals who served at Camp Lejeune during that time frame. These post-1982 studies were conducted after elevated levels of PCE and TCE were first discovered.<sup>133</sup>

In short, although Camp Lejeune opened in 1942 and the water contamination dates to 1953, the discovery of elevated levels of TCE and PCE was not made until 1982. Once again, servicemembers suffered with a myriad of diseases for decades before the VA formally recognized the adverse health consequences caused by their time in service. Strikingly, there is a long list of diseases that are presumed to be service connected for veterans who served at Camp Lejeune during the stated period. Kidney cancer, liver cancer, Parkinson's disease, and bladder cancer, among others, are on the list of presumed conditions.<sup>134</sup>

Much like veterans exposed to Agent Orange and veterans who served in the Persian Gulf, former prisoners of war usually do not have all their personnel and health records—records that, as outlined above, make it easier to prove direct service connection.<sup>135</sup> For former prisoners of war, the VA relies on evidentiary presumptions; the VA provides guidelines for reviewing medical evidence.<sup>136</sup> The standard that the VA uses is much like the standard IOM used in its Agent Orange report.<sup>137</sup>

With Agent Orange, there is finally a large body of research connecting exposure to health consequences. For former POWs, there is minimal research regarding their unique experiences and resulting adverse

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131. *See id.*

132. 38 C.F.R. § 3.307(a)(7)(iii) (2021).

133. Diseases Associated with Exposure to Contaminants in the Water Supply at Camp Lejeune, 81 Fed. Reg. 62,419 (Sept. 9, 2016) (to be codified at 38 C.F.R. pt. 3).

134. 38 C.F.R. § 3.309(f) (2021).

135. Presumptions of Service Connection for Diseases Associated with Service Involving Detention or Internment as a Prisoner of War, 69 Fed. Reg. 60,083 (Oct. 7, 2004) (to be codified at 38 C.F.R. pt. 1, 3).

136. *Id.*

137. *Id.* The standard may be satisfied if one high-quality study finds a statistically significant association or if several smaller studies detect an association consistent in magnitude and direction. *Id.*

health conditions. Fortunately, the VA recognizes the importance of compensating former POWs and thus does not place undue significance on limited scientific research data.<sup>138</sup> The VA Secretary is not limited to studies specifically about former POWs—the Secretary may rely on studies that focus on the health effects stemming from hardships similar to those experienced by POWs.<sup>139</sup> Due to a lack of strong medical and scientific data, explained more in Part III, perhaps a similar approach is needed to provide benefits to servicemembers exposed to burn pits.

### III. EFFORTS TO RESEARCH THE EFFECTS OF BURN PIT EXPOSURE

This Part examines the limited medical and scientific research available regarding links between burn pit exposure and adverse health conditions. Additionally, this Part highlights the VA's ongoing efforts to research burn pit exposure and resulting medical conditions and examines weaknesses in the VA's current approach.

In its 1978 guidance on solid waste management, the Department of Defense formally documented the reality that burn pits create health hazards.<sup>140</sup> Notwithstanding this guidance, burn pits were commonly used as a waste disposal method long after 1978, in areas stretching from the Middle East to Central Asia.<sup>141</sup> More than 30 years later, in 2010, there were at least 251 active burn pits in Afghanistan alone and another 22 located in Iraq.<sup>142</sup> That same year, in spite of the 1978 guidance, the DOD reported to Congress that burn pits would be the safest and most effective solid waste management option.<sup>143</sup>

Also in 2010, the Government Accountability Office (GAO) published a report wherein it noted that the DOD had not used waste management alternatives to decrease its use of burn pits and that the

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138. *Id.* at 60,085.

139. *Id.*

140. DEP'TS OF THE ARMY, NAVY, & AIR FORCE, PAM 420-47 NAVFAC MO-213 AFP 91-8, SOLID WASTE MANAGEMENT (June 1978).

141. U.S. GOV'T ACCOUNTABILITY OFF., GAO-16-781, DOD HAS GENERALLY ADDRESSED LEGISLATIVE REQUIREMENTS ON THE USE OF BURN PITS BUT NEEDS TO FULLY ASSESS HEALTH EFFECTS 4 (2016), <https://www.gao.gov/assets/gao-16-781.pdf> [<https://perma.cc/EC85-XS2P>] [hereinafter U.S. GOV'T ACCOUNTABILITY OFF., DOD HAS GENERALLY ADDRESSED].

142. U.S. GOV'T ACCOUNTABILITY OFF., GAO-11-63, AFGHANISTAN AND IRAQ: DOD SHOULD IMPROVE ADHERENCE TO ITS GUIDANCE ON OPEN PIT BURNING AND SOLID WASTE MANAGEMENT 9 (2010), <https://www.gao.gov/assets/gao-11-63.pdf> [<https://perma.cc/X6SQ-GPZ3>].

143. *Id.* at 30.

military had not monitored burn pit pollutants as directed.<sup>144</sup> DOD officials stated that environmental planning and waste management are not always high-priority concerns under wartime conditions.<sup>145</sup> GAO recommended that the DOD implement guidance for burn pit operations and find feasible alternatives to waste management.<sup>146</sup> Burn pits are still burning today.

*A. Short-term and Long-term Health Consequences*

As acknowledged by the VA, veterans exposed to burn pits might exhibit short-term or long-term health effects.<sup>147</sup> Short-term effects include eye irritation, coughing, throat irritation, breathing difficulties, skin itching, and rashes.<sup>148</sup> These short-term effects are usually temporary and disappear not long after the last exposure.<sup>149</sup> Unfortunately, servicemembers with burn pit exposure have reported long-term effects such as reduced central nervous system function; reduced liver or kidney function; stomach, respiratory, and skin cancers; and leukemia.<sup>150</sup>

Of course, establishing strong associational links between burn pit exposure and adverse health consequences such as those listed above requires robust data, complex analysis, time, and sound scientific and medical research. As detailed in Part II, determining whether substances are harmful and have an adverse impact on health, short or long term, is challenging. This quest requires an advanced understanding of the amount, frequency, type, and intensity of exposure.

Additionally, because there are multiple health hazards found within austere environments such as warzones, servicemembers with adverse symptoms and burn pit exposure are sometimes like symptomatic Persian Gulf War veterans. Persian Gulf War veterans who experience adverse symptoms can have symptoms without a known direct cause and it is difficult to quantify their exposure. Rather than leave these Persian Gulf War veterans without remedies, the VA created the “Gulf War

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144. *Id.* at 30–31.

145. *Id.* at 31.

146. *Id.* at 24.

147. *Airborne Hazards and Burn Pit Exposures*, U.S. DEP’T OF VETERANS AFFS., <https://www.publichealth.va.gov/exposures/bumpits/> [<https://perma.cc/9UZ6-UP7V>] (last visited Oct. 21, 2021).

148. Kirsten Hirt, *What Are the Dangers of Burn Pit Exposure?*, HILL & PONTON (Sept. 27, 2020), <https://www.hillandponton.com/what-are-the-dangers-of-burn-pits/> [<https://perma.cc/HH9N-NNQT>]; see also *Airborne Hazards and Burn Pit Exposures*, *supra* note 147.

149. Hirt, *supra* note 148.

150. *Id.*

Symptoms,” which consist of three categories: “undiagnosed illness, medically unexplained chronic multisymptomatic illness, and infectious diseases.”<sup>151</sup>

If an undiagnosed illness or medically unexplained chronic multi-symptom illness manifests, a Persian Gulf War veteran qualifies for VA disability compensation if he or she served on active military duty in the Southwest Asia theater of operations—which excludes Uzbekistan, where K2 is located—any time between August 2, 1990, to the present day and has a chronic disability resulting from an undiagnosed illness, a medically unexplained chronic multi-symptom illness, or a combination of both that manifested during active duty or to a degree of at least ten percent no later than December 31, 2021.<sup>152</sup> Conditions are considered chronic if they have existed for six months or more, or if they have displayed “intermittent episodes of improvement and worsening over a six-month period.”<sup>153</sup> For example, a Persian Gulf War veteran with irritable bowel syndrome (IBS), a medically unexplained chronic multi-symptom illness,<sup>154</sup> will be entitled to VA compensation benefits if the IBS initially manifested either during the veteran’s active service in the Southwest Asia theater of operations or to a degree of at least 10% since the veteran’s return from active duty in this theater of operations. Also, in *Goodman v. Shulkin*, the Federal Circuit opined that VA adjudicators may use a medical examiner’s opinion regarding whether the veteran’s condition is a medically unexplained chronic multi-symptom illness.<sup>155</sup>

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151. U.S. GOV’T ACCOUNTABILITY OFF., GAO-21-253T, VA DISABILITY BENEFITS: PROCESS FOR IDENTIFYING CONDITIONS PRESUMED TO BE SERVICE CONNECTED AND CHALLENGES IN PROCESSING COMPLEX GULF WAR ILLNESS CLAIMS 3 (2020), <https://www.gao.gov/assets/gao-21-253t.pdf> [<https://perma.cc/55AR-CERA>].

152. *Id.* at 4. Covered areas include Iraq, Kuwait, Saudi Arabia, the neutral zone between Iraq and Saudi Arabia, Bahrain, Qatar, the United Arab Emirates, Oman, the Gulf of Aden, the Gulf of Oman, the Persian Gulf, the Arabian Sea, the Red Sea, and the airspace above these areas. 38 C.F.R. § 3.317(c)(2) (2021) (only the sections dealing with infectious diseases apply to Afghanistan veterans).

153. 38 C.F.R. § 3.317(a)(4) (2021).

154. A medically unexplained chronic multi-symptom illness is a diagnosed illness without conclusive pathophysiology or etiology characterized by overlapping symptoms and includes features like pain and fatigue in the absence of laboratory abnormalities. 38 C.F.R. § 3.317(a)(2)(ii) (2021). In *Stewart v. Wilkie*, 30 Vet. App. 383 (2018), the U.S. Court of Appeals for Veterans Claims held that there is a multi-symptom illness where either the etiology or pathophysiology is inconclusive. *Id.* at 389.

155. *Goodman v. Shulkin*, 870 F.3d 1383, 1387 (Fed. Cir. 2017).

As for infectious diseases and Persian Gulf War veterans, studies are ongoing.<sup>156</sup> Currently, there are nine infectious diseases listed in 38 C.F.R. § 3.317(c)(2).<sup>157</sup> Additionally, per Congress's direction, the VA must determine if any illness warrants a presumption of service connection based on a positive association with exposure to biological, chemical, or other toxins linked to service during the Persian Gulf War.<sup>158</sup> Ultimately, Congress decided that these servicemembers were exposed to unique wartime conditions—conditions that caused wide-spread suffering among servicemembers. These unique circumstances, like those experienced by servicemembers who served at or near burn pits, warranted a service-connection presumption in favor of symptomatic Persian Gulf War veterans.

Parallels also exist between burn pit exposure and Agent Orange exposure. During the Vietnam War, as explained in Part II, servicemembers were exposed to environmental conditions that are unique to warfare. As a result of their time in service, Vietnam War veterans experienced greater likelihoods of adverse health consequences, eventually, although not initially, proven by scientific and medical research. As such, when seeking VA disability compensation, these veterans do not travel down the rocky road to direct service connection; these veterans travel a smoother road, paved by the Agent Orange Act of 1991.<sup>159</sup> Of course, gridlock was common during the more than 20 years it took to pave this road.

As mentioned in Part I, burn pits were commonly used in areas such as Afghanistan and Iraq, and the waste burned at large bases such as JBB was comprised of combustible and non-combustible materials, plastics, metals, and wood.<sup>160</sup> When the IOM committee analyzed air pollutant samples from JBB, it found not one, not two, but three major classes of chemicals—PCDD/Fs, VOCs, PAHs, and PM—and concluded that these chemicals have long-term health effect associations.<sup>161</sup>

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156. Presumptions of Service Connection for Persian Gulf Service, 75 Fed. Reg. 13,052–3 (Mar. 18, 2010) (to be codified at 38 C.F.R. § 1118).

157. These are: brucellosis; *Campylobacter jejuni*; *Coxiella burnetti*; malaria; *Mycobacterium tuberculosis*; nontyphoid salmonella; shigella; visceral leishmaniasis; and West Nile virus. 38 C.F.R. § 3.317(c)(2) (2021).

158. 38 U.S.C.S. § 1118(a)(2)(A).

159. Statement on Signing the Agent Orange Act of 1991, 1 PUB. PAPERS 114 (Feb. 6, 1991).

160. INST. OF MED., LONG-TERM HEALTH, *supra* note 33, at 3.

161. *Id.* at 5.

Given the scientific and medical research to date, and the estimated 3.5 million servicemembers who were exposed to burn pits,<sup>162</sup> stories like that of Lieutenant Colonel Tim Brooks are becoming more common. While he was stationed at K2 in 2001, he complained to his wife about “black gunk” oozing from the floorboards lining his living quarters.<sup>163</sup> Just a few years after returning to the U.S., Lieutenant Colonel Brooks undoubtedly thought he had resumed a normal life—a life without bombs, bullets, or burning pits.<sup>164</sup> Unexpectedly, Lieutenant Colonel Brooks collapsed during a pre-deployment brief as his unit was preparing to deploy to Iraq; Brooks was later diagnosed with stage three brain cancer and died one year later.<sup>165</sup> Per military reports, the “black gunk” oozing into Lieutenant Colonel Brooks’s living quarters was likely a combination of oils, hydraulic fluids, glues, paints, solvents, and lubricants.<sup>166</sup>

“[W]e are all coming down with various forms of cancer that the [Department of Veterans Affairs] is refusing to acknowledge,” said retired Army Chief Warrant Officer Scott Welsch, who was exposed to burn pits and was diagnosed with thyroid cancer in 2014.<sup>167</sup> Military physicians have also raised concerns about the number of people diagnosed with cancer who previously served at K2.<sup>168</sup> Lieutenant Colonel Frank DeAngelo, a military surgeon, wrote to VA after learning about three separate brain cancer cases, all of which were diagnosed in people who were stationed at K2.<sup>169</sup> Given an annual incidence rate of 1 per 16,000 cases of brain malignancy, Lieutenant Colonel DeAngelo found these cases, which were all diagnosed in former K2 occupants, very suspicious.<sup>170</sup> Speaking of his personal deployment to K2, Representative Mark Green, who is also an Army surgeon, highlighted the rarity of his

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162. *Burn Pit Veterans in the Dark on Coronavirus Risk*, *supra* note 7.

163. Patricia Kime, *Post 9/11 Veterans Attribute Deadly Cancers to Contaminants at US Base in Uzbekistan*, MILITARY TIMES: PENTAGON & CONG. (Feb. 27, 2020), <https://www.militarytimes.com/news/pentagon-congress/2020/02/27/post-911-veterans-attribute-deadly-cancers-to-contaminants-at-us-base-in-uzbekistan/> [<https://perma.cc/5R4K-ND4H>] [hereinafter Kime, *Post 9/11 Veterans*].

164. *Id.*

165. *Id.*

166. Tara Copp, *Cancers Strike Veterans Who Deployed to Uzbek Base Where Black Goo Oozed, Ponds Glowed*, MCCLATCHY D.C. BUREAU: NAT’L SEC. (Dec. 19, 2019), <https://www.mcclatchydc.com/news/nation-world/national/national-security/article238510218.html> [<https://perma.cc/JS7N-8UQK>].

167. *Id.*

168. *Id.*

169. *Id.*

170. *Id.*

health condition—having two primary cancers, colon and thyroid, at the same time.<sup>171</sup>

Per the EPA, burning trash or fuels such as wood, coal, or oil produces a dangerous chemical called dioxin.<sup>172</sup> The EPA has found that “[d]ioxins are highly toxic and can cause cancer, reproductive and developmental problems, damage to the immune system, and can interfere with hormones.”<sup>173</sup> Dioxins are usually divided into three familiar categories: PCDDs, PCDFs and PCBs.<sup>174</sup> Because of known dangers, the United States does not commercially produce or use dioxins; however, non-commercial activities such as burning household or backyard trash produce PCDDs and PCDFs.<sup>175</sup>

Let us reexamine some of the common items incinerated in burn pits. These items include, but are not limited to, wood, petroleum, human waste, and plastics.<sup>176</sup> These items are like those commonly burned on occasion as household or backyard trash. It is therefore likely that servicemembers who worked at or near burn pits, some of which burned twice a day, have been directly exposed to dangerous dioxins.

Moreover, it is not an illogical leap to assume that those who served at, around, or anywhere near burn pits were indirectly exposed to dioxins from burn pit emissions through drinking water. The EPA has stated that water may become contaminated with dioxins from air emissions, air emissions with dioxins may get deposited to nearby reservoirs, or dioxin-polluted soils may corrode surface waters.<sup>177</sup> While deployed, military personnel hydrate, take showers, and perform other activities using nearby water sources.

A 2015 study conducted by the U.S. Army found that servicemembers deployed to K2, home to one of the most well-known burn pits, were over five times more likely than those who deployed to South Korea to develop cancer.<sup>178</sup> Specifically, these men and women were more likely to develop

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171. Kime, *Post 9/11 Veterans*, *supra* note 163.

172. *Learn About Dioxin*, EPA, <https://www.epa.gov/dioxin/learn-about-dioxin> [<https://perma.cc/29MS-MTKM>] (last visited Oct. 21, 2021).

173. *Id.*

174. *Id.*

175. *Id.*

176. *What Are Symptoms of Exposure to Military Burn Pits?* CHISHOLM CHISHOLM & KILPATRICK LTD, <https://cck-law.com/veterans-law/what-are-symptoms-of-exposure-to-a-military-burn-pit/> [<https://perma.cc/E3UX-33J4>] (last visited Jan. 12, 2022).

177. *Learn About Dioxin*, *supra* note 172.

178. *Chairman Lynch Seeks Information Related to Hazardous Conditions at Uzbekistan Air Base*, STEPHEN F. LYNCH (Jan. 14, 2020), <https://lynch.house>

cancerous tumors of lymphatic and hematopoietic tissue.<sup>179</sup> Curiously, despite this study and others, the VA has still not formally acknowledged a causal link between burn pit exposure and resulting health conditions like cancer. In fact, an undated two-page guide to VA health care providers states that “[a]t this time, there is conflicting and insufficient research to show that long-term health problems have resulted from burn pit exposure.”<sup>180</sup> This guide is created for those who provide hands-on healthcare to veterans, including veterans with burn pit exposure.

The language in the VA guide suggests that potentially thousands of current and former servicemembers and their families should suffer while waiting for the VA to uncover stronger scientific conclusions. This is an odd stance given the VA’s experiences with Vietnam and Persian Gulf war veterans. The VA should extract lessons learned and not repeat its history of making veterans with service-connected illnesses or diseases wait decades for VA disability compensation as the science develops. Moreover, it is reasonable to argue that currently available scientific and medical research is more than sufficient to create favorable presumptions.

The 2011 IOM review of air monitoring efforts at JBB found that PM concentrations were higher than U.S. pollution standards.<sup>181</sup> Importantly, the IOM limited its JBB observations to toxins targeted by DOD. It did not provide data on other chemicals that were likely present.<sup>182</sup> Nonetheless, subsequent studies also noted that the JBB burn pit contributed to PCDD/Fs on base.<sup>183</sup>

Investigators in another study examined the burn pit at Bagram Airfield in Afghanistan, which operated from 2005 to 2012. The investigators collected samples from several areas on base and studied PM and VOCs.<sup>184</sup> The toxin Acrolein exceeded the one-year military exposure

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.gov/2020/1/chairman-lynch-seeks-information-related-hazardous-conditions-uzbekistan-air-base [https://perma.cc/9ZD8-8VLM].

179. *Id.*

180. DEP’T OF VETERANS AFFS., HEALTH CARE PROVIDER GUIDE TO THE AIRBORNE HAZARDS AND OPEN BURN PIT REGISTRY (2021), <https://www.health.mil/Reference-Center/Publications/2021/08/01/AHOBPR-Health-Care-Provider-Guide> [https://perma.cc/45WK-CZB3].

181. INST. OF MED., LONG-TERM HEALTH, *supra* note 33 at 5.

182. NAT’L ACADS. OF SCIS., ENG’G, & MED., RESPIRATORY HEALTH EFFECTS OF AIRBORNE HAZARDS EXPOSURES IN THE SOUTHWEST ASIA THEATER OF MILITARY OPERATIONS 26 (2020), <https://www.nap.edu/read/25837/chapter/4#26> [https://perma.cc/2XX4-6QT6].

183. *Id.*

184. *Id.*

guidance, and benzene was detected in every sample.<sup>185</sup> In fact, the highest levels of environmental PM occurred at the burn pit.<sup>186</sup> Additionally, scientists at Wright-Patterson Air Force Base in Ohio have studied burn pit toxicity.

The scientists at Wright-Patterson Air Force Base simulated a burn pit and included wastes such as mixed paper, wood, and cardboard.<sup>187</sup> In this study, they used an unexposed group of rats, a rat group exposed to Southwest Asia sand, a rat group exposed to sand followed by burn pit emissions, and a rat group exposed to burn pit emissions only.<sup>188</sup> While their findings were not strongly suggestive, the scientists nonetheless found that burn pit emission exposures began molecular host responses much more strongly than sand inhalation.<sup>189</sup> Additionally, the chronically exposed rat groups displayed more epigenetic changes than the rat groups exposed acutely.<sup>190</sup>

In 2021, Dr. Anthony Szema and Dr. Robert Promisloff prepared a letter to the editor of the *Journal of Occupational and Environmental Medicine* stating that they had detected dust particles in servicemembers' lungs and that they appeared as polarizable crystals.<sup>191</sup> Using advanced technology, they determined that the crystals contained metals such as iron and titanium.<sup>192</sup> These physicians were particularly concerned about particles containing PAH found in lung biopsies of symptomatic servicemembers. They noted that burn pits burn at a lower heat than incinerators, causing more particles.<sup>193</sup> In fact, PM in Balad, Iraq, was recorded as high as 1000  $\mu\text{m}/\text{m}^3$ , which far exceeds the EPA's established limits of 150 for 10- $\mu\text{m}$ -sized particles.<sup>194</sup> Particulate matter is linked to

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185. *Id.*

186. *Id.*

187. NICHOLAS J. DELRASO ET AL., AIR FORCE RSCH. LAB'Y, BURN PIT EMISSION AND RESPIRABLE SAND EXPOSURES IN RATS: NMR-BASED URINARY METABOLIC ASSESSMENT 1 (2018), <https://apps.dtic.mil/sti/pdfs/AD1064148.pdf> [<https://perma.cc/AS9V-MBTD>].

188. *Id.*

189. *Id.* at 1, 28.

190. *Id.*

191. Anthony M. Szema et al., *Presumptive Benefits for War Fighters Exposed to Burn Pits and Other Toxins Act of 2021: Cedit qaestio*, 63 J. OCCUPATIONAL & ENV'T MED. e250 (2021) [hereinafter Szema et al., *Presumptive Benefits*].

192. *Id.*

193. *Id.*

194. Anthony M. Szema et al., *Proposed Iraq/Afghanistan War-Lung Injury (IAW-LI) Clinical Practice Recommendations: National Academy of Sciences' Institute of Medicine Burn Pits Workshop*, 11 AM. J. MEN'S HEALTH 1653 (2017) [hereinafter Szema et al., *Proposed Iraq/Afghanistan War-Lung Injury*]; see also,

several diseases, and these physicians highlighted the dangers of burn pit emissions by pointing out that even indoor wood cookstoves have been known to cause high rates of cardiovascular and pulmonary disease from exposure to incomplete combustion.<sup>195</sup> They concluded by stating that after 17 years, it is time to acknowledge the sacrifices made by our servicemembers and offer assistance.<sup>196</sup>

Admittedly, existing epidemiologic studies are limited. The absence of sufficient associations, however, seems to be due to a lack of quality data. For instance, the 2011 report from IOM noted that the available database was marked by multiple data gaps and IOM recommended additional studies and analysis.<sup>197</sup> The Department of Veterans Affairs assigned research tasks to IOM, and IOM reviewed literature that was not yet peer-reviewed because “there was a paucity of information.”<sup>198</sup> Moreover, latent diseases often manifest years after exposure—the latent period for brain cancer, for example, is ten to twenty years.<sup>199</sup>

In 2011, IOM concluded that there was insufficient evidence, at that time, to *definitively* associate burn pit emissions at JBB with long-term health effects.<sup>200</sup> The IOM, however, also found that cardiovascular and respiratory morbidity and mortality were associated with PM exposure, and chronic cardiovascular and respiratory effects were associated with PM concentrations lower than those from JBB.<sup>201</sup> Per IOM, it was difficult to pinpoint the source of PM as the burn pit.<sup>202</sup> As noted by the GAO in 2018, IOM nonetheless acknowledged a lack of data and did not rule out a relationship between burn pit exposure and negative health outcomes.<sup>203</sup> Due to a continued need for research, IOM created a how-to guide for the DOD to use in future epidemiologic studies; as late as 2016, the DOD had

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*EPA Response to September 11*, EPA, [epa.gov/wtc/summary/epaosha02221.html](https://epa.gov/wtc/summary/epaosha02221.html) (last visited Oct. 24, 2021).

195. Szema et al., *Presumptive Benefits*, *supra* note 191.

196. *Id.*

197. INST. OF MED., *LONG-TERM HEALTH*, *supra* note 33 at 109.

198. *Id.* at 13.

199. *Id.* at 93.

200. *Id.* at 114.

201. *Id.* at 112.

202. *Id.*

203. U.S. GOV'T ACCOUNTABILITY OFF., GAO-18-596T, *WASTE MANAGEMENT: DOD NEEDS TO FULLY ASSESS THE HEALTH RISKS OF BURN PITS* (2018), <https://www.gao.gov/assets/gao-18-596t.pdf> [https://perma.cc/K6FU-SFB9].

still not conducted an epidemiologic study per IOM's recommendations and guidelines.<sup>204</sup>

When reviewing scientific findings, one must consider the reality that deployed servicemembers are estranged from loved ones while operating in grim environments, factors that could increase their vulnerability to burn pit emissions. Stress has definite adverse health effects as it impacts key regulatory systems such as the immune system, central nervous system, and cardiovascular system.<sup>205</sup> Army deployments, for instance, are usually at least 12 months long, sometimes 15 months in duration, and Air Force deployments are usually at least 4 months long. Chronic stress increases one's vulnerability to injury from exposure to environmental stressors.<sup>206</sup> Pollutants like those from burn pits affect several of the same key systems as stress, so it is likely that combined psychosocial and environmental exposures increase servicemembers' risks of respiratory health consequences.<sup>207</sup>

Factors such as noise may also increase servicemembers' vulnerability to illnesses or diseases from burn pit emissions. War zones are not just packed with pollutants; they also include powerful noises such as mortar round explosions. Long-term environmental noise is linked to several adverse health conditions such as endocrine effects and cardiovascular disease.<sup>208</sup> Notably, in a study of male highway workers, increased levels of PM and noise combined to increase heart-rate variability.<sup>209</sup>

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204. *Id.* In response to section 201 of Public Law 112-260, the VA finally contracted with the National Academies of Sciences, Engineering, and Medicine to put together a committee and provide recommendations on monitoring and using the AHOBPR. *See* NAT'L ACADS. OF SCIS., ENG'G, & MED., ASSESSMENT OF THE DEPARTMENT OF VETERANS AFFAIRS AIRBORNE HAZARDS AND OPEN BURN PIT REGISTRY (2017) [hereinafter NAT'L ACADS. OF SCIS., ENG'G, & MED., ASSESSMENT].

205. NAT'L ACADS. OF SCIS., ENG'G, & MED., ASSESSMENT, *supra* note 204, at 37.

206. *Id.*

207. *Id.*

208. Monica S. Hammer et al., *Environmental Noise Pollution in the United States: Developing an Effective Public Health Response*, ENV'T HEALTH PERSPS. 115–19 (2014).

209. Reto Meier et al., *Associations of Short-Term Particle and Noise Exposures with Markers of Cardiovascular and Respiratory Health Among Highway Maintenance Workers*, ENV'T HEALTH PERSPS. 726 (2014).

*B. The Airborne Hazards and Open Burn Pit Registry*

To collect data and better understand the side effects of burn pit exposure on servicemembers, the VA uses its Airborne Hazards and Open Burn Pit Registry (AHOBPR), established in 2014.<sup>210</sup> Current and former servicemembers register online and self-report through a questionnaire that takes about one hour to complete.<sup>211</sup> Eligible servicemembers answer a series of questions and provide information about their deployments, health and exposure concerns, medical history, activity limitations, if any, and additional risks that might affect their overall health.<sup>212</sup> Registering online and completing the questionnaire does not qualify servicemembers for VA disability compensation. Disability applications related to burn pit exposure are considered for direct service connection on a case-by-case basis through the complex VA claims process explained in Part II, above.<sup>213</sup>

The registry is used for data collection; it is not used for service connection leading to VA disability benefits. Current and former servicemembers are eligible for the registry if they served in Operations Desert Storm or Shield, New Dawn, or Iraqi Freedom or Enduring Freedom.<sup>214</sup> This includes servicemembers that deployed to Southwest Asia any time after August 2, 1990, or Afghanistan or Djibouti after September 11, 2001.<sup>215</sup> Uzbekistan is excluded, so servicemembers that only served in Uzbekistan are not eligible to register and complete the questionnaire.

On December 8, 2020, the National Academies of Sciences, Engineering, and Medicine (NASEM) conducted a second review of the AHOBPR, per the VA's need to comply with Public Law 112-260, the law that established the AHOBPR.<sup>216</sup> The statistics collected by NASEM are both revealing and concerning. As of October 2020, more than 370,000 people (it appears that eligibility is not strictly limited to servicemembers) had used the AHOBPR; of these, 217,448 were classified as "participants,"

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210. NAT. ACADS. OF SCIS., ENG'G, & MED., NASEM 2ND REVIEW OF THE AIRBORNE HAZARDS AND OPEN BURN PIT REGISTRY CHARGE TO THE COMMITTEE (2020) [hereinafter NAT. ACAD. OF SCI., ENG'G & MED., NASEM].

211. *Id.*

212. *Id.*

213. *Airborne Hazards and Burn Pit Exposures*, *supra* note 147.

214. *Home: About the Registry*, U.S. DEP'T OF VETERANS AFFS., <https://veteran.mobilehealth.va.gov/AHBurnPitRegistry/index.html#page/home> [<https://perma.cc/2LZQ-NWRV>] (last updated June 24, 2021).

215. *Id.*

216. NAT. ACAD. OF SCI., ENG'G, & MED., NASEM, *supra* note 210.

meaning they fully completed the online questionnaire.<sup>217</sup> By November 2020, this number of participants had ballooned to 221,745.<sup>218</sup> This is nearly an eightfold increase from 2014, when the number was at just 28,484.<sup>219</sup> Current and former servicemembers from various age groups have participated in AHOBPR. As of July 2020, 85.1% of the participants were between 25 and 54 years old. Of all the participants, 90.9% reported at least one burn pit exposure, and 57.4% reported burn pit duties.<sup>220</sup>

A study using data from the AHOBPR gathered through 2015 concluded that there are suggestive associations between burn pit exposure and increased risk of respiratory and cardiovascular conditions; this conclusion, however, was limited to self-reported emphysema, chronic bronchitis, or COPD.<sup>221</sup> This study aimed to obtain additional information regarding a potential link between burn pit emissions and adverse health outcomes, particularly to address growing concerns of current and former servicemembers who had served in the Southwest Asia region.<sup>222</sup>

This study used data from the AHOBPR, the Armed Forces Health Surveillance Center, and the U.S. Department of Defense Manpower Data Center that was gathered through 2015.<sup>223</sup> This study was based on two types of information: number of days near burn pits and total hours of exposure to smoke from a burn pit.<sup>224</sup> For the reference group, the study only used servicemembers deployed to Kuwait.<sup>225</sup> The researchers analyzed the following respiratory and cardiovascular conditions: asthma and emphysema, chronic bronchitis, or COPD for the respiratory conditions, and hypertension and cardiovascular disease for the cardiovascular conditions.<sup>226</sup>

Using chi-square tests and data from self-reports, the study found that more time near burn pits increased the risk of emphysema, chronic bronchitis, or COPD.<sup>227</sup> When the study used data from VA medical records, it did not find expressive associations between exposure time and

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217. *Id.*

218. *Id.*

219. *Id.*

220. *Id.*

221. Jason Liu, *Burn Pit Emissions Exposure and Respiratory and Cardiovascular Conditions Among Airborne Hazards and Open Burn Pit Registry Participants*, J. OCCUPATIONAL & ENV'T MED. 249, 255 (2016).

222. *Id.* at 249.

223. *Id.*

224. *Id.*

225. *Id.*

226. *Id.*

227. *Id.*

these conditions.<sup>228</sup> Moreover, the study did not reveal significant associations between exposure time and asthma, hypertension, or CVD using both the self-reported data and medical records.<sup>229</sup>

This is not surprising. As noted by the GAO in its 2016 report, the exact effects of burn pit emissions exposure are not well understood, and not even the DOD has fully assessed all potential health consequences.<sup>230</sup> In the 2016 report, the GAO also implied that the DOD had not complied with its own instruction, DOD Instruction 6055.01, which requires the DOD to apply risk-management strategies to reduce or eliminate occupational injury or illness.<sup>231</sup> The GAO further noted in its report that the DOD has understood for more than 30 years that burn pits pose health hazards, even though the exact health risks are not yet clearly understood.<sup>232</sup> The GAO published another report in 2018.

As with other studies that investigate the relationship between burn pit exposure and health outcomes, the authors of the study using chi-square tests and self-reported data noted variables that may affect the reliability of their findings. The study used veterans' self-reports and VA medical records,<sup>233</sup> partly relying on information from AHOBPR.<sup>234</sup> The authors of the study recognized that the sample pool might not be representative of the veterans, and that having more up-to-date information could strengthen the relationship among diseases with longer latency, risk of respiratory and cardiovascular conditions, and burn pit exposure.<sup>235</sup> Moreover, because various air hazards such as dust storms and combat-related smoke combine to form air pollutants, more detailed analysis on sources of exposure could strengthen the association.<sup>236</sup>

More scientific and medical research in this area is critical, given the significant exposure rates. Per the 2015 VA report on AHOBPR, 62% of the participants self-reported that they had served at a burn pit site at least once and 33% of participants were near a burn pit at least once.<sup>237</sup> Sixteen

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228. *Id.*

229. *Id.*

230. U.S. GOV'T ACCOUNTABILITY OFF., DOD HAS GENERALLY ADDRESSED, *supra* note 141.

231. *Id.*

232. *Id.*

233. Liu et al., *supra* note 221, at 254.

234. *Id.* at 255.

235. *Id.*

236. *Id.*

237. U.S. DEP'T OF VETERANS AFFS., REPORT ON DATA FROM THE AIRBORNE HAZARDS AND OPEN BURN PIT (AH&OBP) REGISTRY 5 (2015), <https://www.publichealth.va.gov/docs/exposures/va-ahobp-registry-data-report-june2015.pdf>

percent of the total participants reported that they had been diagnosed with COPD, chronic bronchitis, or emphysema.<sup>238</sup> Of the 62% of participants who worked at a burn pit, 17% reported these diseases.<sup>239</sup> Rates varied based on the amount of burn pit exposure: 13% of participants who did not work at a burn pit but experienced exposure to a burn pit, and only 11% of the participants without burn pit exposure who served in the Southwest Asia theater of operations reported a diagnosis of these diseases.<sup>240</sup> In addition, 40% of the participants reported that they had been diagnosed with a cardiovascular condition; 36% named hypertension as a diagnosis, making hypertension the most common cardiovascular condition;<sup>241</sup> and 6% reported to have already been diagnosed with some type of cancer.<sup>242</sup>

These AHOBPR statistics are useful, although they are limited because it is difficult to draw definite lines from burn pit exposure to long-term health consequences. This is due to limited data sets and other wartime hazards. Moreover, most AHOBPR participants are younger than 55, and long-term studies are needed to research long-term health consequences. Data from the AHOBPR and conclusions from scientific studies are nonetheless striking. These statistics and findings are particularly troubling when one examines how current and former servicemembers are faring in their fight to obtain VA disability compensation.

#### IV. THE BATTLE FOR RECOGNITION OF VETERANS' BURN-PIT-RELATED CONDITIONS

This Part identifies the number of applications that have been filed with the VA for disability compensation based on burn pit exposure. It also examines the length of time the VA usually takes to review each VA disability application. Moreover, this Part highlights the VA's dismal approval rate for direct service connection based on burn pit exposure.

Because the VA has not created favorable presumptions for veterans exposed to burn pit emissions, these veterans must pursue the direct service connection as detailed in Part II. When no presumptions exist,

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[<https://perma.cc/2WJ9-S3LH>]. Other data sources are Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn (OEF/OIF/OND) Roster File, Oil Well Fire Registry File, Assistant Deputy Under Secretary for Health (ADUSH) Enrollment Files, and the Corporate Data Warehouse (CDW).

238. *Id.* at 6.

239. *Id.*

240. *Id.*

241. *Id.*

242. *Id.* at 7.

veterans are entitled to VA disability compensation if they have a service-connected disease or injury—one that was incurred or aggravated in the line of duty—and the disability was not a result of their own willful misconduct.<sup>243</sup> Of course, veterans must also have received a discharge or release under conditions other than dishonorable, and there cannot be any regulatory or statutory bars to VA disability compensation. In short, a veteran with burn pit exposure must show competent evidence of a current disability, evidence of an in-service incurrence or aggravation of a disease or injury, and a clear connection between the in-service incurrence or aggravation and the current disability.<sup>244</sup>

To fully understand the challenges that veterans face when fighting for VA disability compensation based on direct service connection, let us examine the VA's track record. For applications based on burn pit exposure, a potential in-service incurrence, the VA's claim approval rate has been dismal. VA Deputy Executive Director of Policy and Procedures Laurine Carson stated that from 2007 to 2020, the VA only approved 2,828 of 12,582 disability claims filed with the VA based on burn pit exposure.<sup>245</sup> This is an approval rate of just 22%. The Department of Veterans Affairs denied 78% of these claims.<sup>246</sup>

Adding insult to injury, as of June 30, 2021, veterans wait an average of 134.4 days—over four months—for the VA to render a decision on their disability applications.<sup>247</sup> This 134.4-day period does not include the appeals process, which veterans might pursue if they disagree with the VA's initial decision. Vietnam War veterans had a similar experience with the VA before the Agent Orange Act of 1991, which required the VA's extensive review of scientific and medical evidence and favorable presumptions.

By April 1993, nearly 40,000 veterans had filed claims for VA disability compensation based on Agent Orange exposure, and the VA had approved only 486 of these claims.<sup>248</sup> Vietnam War veterans had been

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243. 38 U.S.C.S. §§ 105(a), 1110.

244. See *Caluza v. Brown*, 7 Vet. App. 498, 506 (1995).

245. Steve Beynon, *VA Has Denied About 78% of Disability Claims from Burn Pits*, STARS & STRIPES (Sep. 23, 2020), <https://www.stripes.com/veterans/va-has-denied-about-78-of-disability-claims-from-burn-pits-1.646181> [<https://perma.cc/MR43-N7NH>] [hereinafter Beynon, *VA Has Denied*].

246. *Id.*

247. *The VA Claim Process After You File Your Claim*, U.S. DEP'T OF VETERANS AFFS., <https://www.va.gov/disability/after-you-file-claim/> [<https://perma.cc/8P7Y-76QA>] (last updated Oct. 1, 2021).

248. DORIS ZAMES ET AL., *THE DISABILITY RIGHTS MOVEMENT: FROM CHARITY TO CONFRONTATION* 178 (2011).

filing for disability benefits since 1977 and the VA denied 99% of their claims until 1993. Most of these denials were based on the veterans' inability to prove direct service connection.<sup>249</sup> Veterans struggled to show sufficient evidence of a nexus between Agent Orange exposure and certain diseases. Ultimately, scientific and medical evidence was lacking for decades, and the VA denied disability compensation based on this lack of evidence, particularly concerning long-term health conditions like cancers.<sup>250</sup>

In fact, the Institutes of Medicine had declared that "there was no definitive scientific evidence showing that the disorders treated were related to the exposure" of Agent Orange.<sup>251</sup> There were uncertainties within the scientific and medical communities at the time, although veterans' concerns were mounting. As concerns and symptoms continued to climb, Congress upheld the promise of care for veterans when it enacted the Veterans' Dioxin and Radiation Exposure Compensation Standards Act in 1984 and the Agent Orange Act in 1991.<sup>252</sup> The Agent Orange Act of 1991 relieved veterans of the heavy burden to prove direct service connection in the wake of weak scientific and medical research. In 1991, this Act mandated that the VA work with IOM to obtain additional scientific evidence, and it formally required the VA to determine the associations between herbicide exposure and specific illnesses.<sup>253</sup> These mandates resulted in a presumptive list of conditions associated with Agent Orange.<sup>254</sup>

The judicial branch also acted to protect Vietnam War veterans in the absence of strong scientific support regarding Agent Orange's adverse health effects. As late as 1986, a VA regulation known as 38 C.F.R. § 3.311a stated that chloracne was the *only* disease shown by scientific evidence as associated with herbicides like Agent Orange. This regulation

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249. SIDATH VIRAGNA PANANGALA, CONG. RSCH. SERV., R43790 VETERANS EXPOSED TO AGENT ORANGE: LEGISLATIVE HISTORY, LITIGATION, AND CURRENT ISSUES, 1 (2014), <https://fas.org/sgp/crs/misc/R43790.pdf> [<https://perma.cc/Z38R-RKXA>] [hereinafter PANANGALA, VETERANS EXPOSED TO AGENT ORANGE].

250. SIDATH VIRAGNA PANANGALA ET AL., CONG. RSCH. SERV., R41405, VETERANS AFFAIRS: PRESUMPTIVE SERVICE CONNECTION AND DISABILITY COMPENSATION 10 (2014), <https://sgp.fas.org/crs/misc/R41405.pdf> [<https://perma.cc/6CBY-4P3E>] [hereinafter PANANGALA ET AL., PRESUMPTIVE SERVICE CONNECTION].

251. PANANGALA, VETERANS EXPOSED TO AGENT ORANGE, *supra* note 249, at 4.

252. *Id.* at 5.

253. *Id.*

254. *Id.*

was at issue when the district court in *Nehmer v. U.S. Veterans' Administration* certified the case as a class action on behalf of all Vietnam War veterans who had been denied VA disability compensation for a condition supposedly connected to Agent Orange.<sup>255</sup> In another win for veterans, an order on May 3, 1989, invalidated the part of the regulation that provided that no condition other than chloracne was associated with herbicide exposure.<sup>256</sup>

A consent decree was issued in 1991. Per the decree, if the VA recognizes that emerging scientific evidence shows a positive relationship between Agent Orange and a new disease, the VA must identify all claims based on the newly recognized disease that were previously denied and pay disability to the previously denied claimants.<sup>257</sup>

Presumptions are established as an effective and fair way to address the challenges veterans face in proving direct service connection if their adverse health conditions are distant from their time in service and the connection between their time in service and conditions is not obvious.<sup>258</sup> In the past, when scientific evidence for associations between disabilities or illnesses and veterans' time in service were not clear, Congress and the judicial branch acted as stop-gaps to protect affected veterans. In the past, the VA has eventually caught up with Congress and the judiciary and has decided whether presumptions based on emerging scientific evidence are appropriate.<sup>259</sup>

Unfortunately, it was almost 15 years from the end of the Vietnam War before the VA created presumptions regarding Agent Orange exposure; in 2022, this list of presumptions is still being updated.<sup>260</sup> It has been more than a decade since the U.S. military conducted large-scale burn pit operations, and most veterans affected by burn pit exposure are still not receiving VA disability compensation.<sup>261</sup>

The Department of Veterans Affairs initially determined that the evidence connecting Agent Orange exposure and certain diseases or

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255. *Nehmer v. U.S. Veterans' Admin.*, 118 F.R.D. 113 (N.D. Cal. 1987).

256. *Nehmer v. U.S. Veterans' Admin.*, 712 F. Supp. 1404, 1409 (N.D. Cal. 1989).

257. *See Nehmer*, 118 F.R.D. at 113.

258. PANANGALA ET AL., PRESUMPTIVE SERVICE CONNECTION, *supra* note 250.

259. *Id.*

260. Hill & Ponton P.A., *Agent Orange Presumptive List of Conditions*, HILL & PONTON DISABILITY ATT'YS, <https://www.hillandponton.com/agent-orange-presumptive-list-of-conditions/> [<https://perma.cc/69C5-54LG>] (last updated June 24, 2021).

261. Beynon, *VA Has Denied*, *supra* note 245.

illnesses was tenuous, although strong support for disability compensation came from stakeholders, which led Congress to act on veterans' behalf. Eventually, scientific and medical research reflected the harsh realities of Agent Orange exposure. Currently, the VA does not recognize a sufficiently strong link between burn pit exposure and adverse health conditions. It has not acted to create a long list of presumed conditions through regulations. The writing is nonetheless on the wall. Congress must act now, so a comprehensive, presumptive list of conditions based on burn pit exposure is created sooner than later.

Part V analyzes the strengths and weaknesses of proposed solutions such as the K2 Veterans Care Act of 2021 and the Presumptive Benefits for Warfighters Exposed to Burn Pits and Other Toxins Act of 2021. Part V also discusses the VA's ability to act in this area through rulemaking. Finally, Part V proposes an approach that the VA should adopt to achieve veteran friendly policies while simultaneously maintaining its budget.

#### V. PENDING PROMISES TO ADDRESS BURN-PIT RELATED CONDITIONS

Burn pit exposure concerns have grown steadily. The House Committee on Veterans' Affairs is considering at least 15 pieces of legislation connected to burn pit exposure. This Part analyzes three of the most well-known pieces of pending legislation. These include the K2 Veterans Care Act of 2021, the Presumptive Benefits for Warfighters Exposed to Burn Pits and Other Toxins Act of 2021 (PBWEBP), and the Toxic Exposure in the American Military Act of 2020 (TEAM). This part notes the strengths and weaknesses of each pending act and highlights another avenue of approach, VA rulemaking.

##### A. *K2 Veterans Care Act of 2021*

On February 25, 2021, bipartisan legislation known as the K2 Veterans Care Act of 2021 was introduced. This is the legislature's attempt to establish a presumption of service connection for veterans exposed to burn pit emissions at K2.<sup>262</sup> This legislation would provide a service connection to K2 veterans who have been diagnosed with toxic exposure-

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262. Richard Blumenthal, *Blumenthal, Baldwin, Lynch & Green Introduce Bipartisan, Bicameral Legislation to Cover K2 Veterans' Toxic Exposure Care and Benefits*, RICHARD BLUMENTHAL (Feb. 25, 2021), <https://www.blumenthal.senate.gov/newsroom/press/release/blumenthal-baldwin-lynch-and-green-introduce-bipartisan-bicameral-legislation-to-cover-k2-veterans-toxic-exposure-care-and-benefits> [https://perma.cc/E5WM-PWRL].

related diseases.<sup>263</sup> As highlighted in Part I, servicemembers who served at K2 were exposed to various toxic hazards such as petrochemical contamination, VOCs, PM, and tetrachloroethylene; these toxins could lead to serious health complications such as bladder cancer, multiple myeloma, and non-Hodgkin's lymphoma.<sup>264</sup> Specific chemical compounds could not be attributed solely to burn pits, although the unclassified documents cite the VA's own statement that toxins from burn pit emissions "may affect the skin, eyes, respiratory and cardiovascular systems, gastrointestinal tract and internal organs."<sup>265</sup>

Per the proposed legislation, which is in the introductory phase and has not passed in the Senate or the House, a service-connection presumption would be available for veterans who exhibit illnesses that have a positive association with exposure to jet fuel, VOCs, PM, depleted uranium, asbestos, or lead-based paint, as determined by the National Academies of Sciences, Engineering, and Medicine.<sup>266</sup> This would include sufficient, limited, or suggestive associations.<sup>267</sup>

This legislation is a promising start, although there are limitations. It only applies to those who served at Karshi Khanabad Air Base, Uzbekistan, between January 1, 2001, and December 31, 2005. Servicemembers exposed to burn pits elsewhere, such as JBB, are not included. Additionally, from the current text, the K2 Veterans Care Act of 2021 does not require the VA Secretary to enter into an agreement with the NAS under which the NAS must review and summarize all scientific evidence related to burn pit exposure and its health consequences. This requirement is found within the Agent Orange Act of 1991; importantly, this requirement led to the discovery of scientific and medical research used to establish presumptive conditions for Vietnam War veterans.<sup>268</sup>

Adding language to this effect would fall in line with the Executive Order on Care of Veterans with Service in Uzbekistan, signed on January

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263. *Id.*

264. Carolyn B. Maloney, *National Security Subcommittee Releases Newly Declassified Documents Revealing How Servicemembers Were Exposed to Multiple Toxic Hazards on Karshi-Khanabad Airbase*, HOUSE COMM. ON OVERSIGHT & REFORM (July 9, 2021), <https://oversight.house.gov/news/press-releases/national-security-subcommittee-releases-newly-declassified-documents-revealing> [<https://perma.cc/8KBF-9UZQ>].

265. *Id.*

266. K2 Veterans Care Act of 2021, S. 454, 117th Cong. (2021).

267. *Id.*

268. *See generally* INST. OF MED., VETERANS AND AGENT ORANGE, *supra* note 103.

19, 2021.<sup>269</sup> Within 365 days of this Executive Order, the Secretary of Defense must conduct a study investigating the toxic exposure by servicemembers deployed to K2 and submit a report of the findings.<sup>270</sup> This executive order does not require studies investigating the exposure by servicemembers at other bases where burn pits were used. Additionally, the National Defense Authorization Act for Fiscal Year 2021 mandates that the DOD conduct a study on K2 veterans and burn pit emissions no less than 180 days after enactment.<sup>271</sup> As such, the findings were required on June 30, 2021, and will be reviewed by the Committees of Armed Services.

This language would also complement the Dignified Burial and Other Veterans' Benefits Improvement Act of 2012.<sup>272</sup> This Act requires the VA Secretary to ensure all medical personnel at the DOD have access to information included in the burn pit registry mentioned in Part III.<sup>273</sup> It also requires the VA Secretary to coordinate efforts to further understand burn pits, especially their effects on veterans' health.<sup>274</sup>

The Agent Orange Act of 1991 required the NAS to conduct subsequent reviews every two years for a period of ten years from the date of its first report regarding Agent Orange exposure. Significantly, subsequent reports solidified an association between Agent Orange and certain adverse health conditions.<sup>275</sup> The K2 Veterans Care Act of 2021

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269. Exec. Order No. 13982, 86 Fed. Reg. 6833 (Jan. 19, 2021). Additionally, on November 11, 2021, President Joseph Biden announced that contaminants pose health risks for veterans; the President acknowledged gaps in existing scientific studies and directed the VA to assess associations between exposures and constrictive bronchiolitis, lung cancer, and respiratory cancer. The VA must complete its review and provide recommendations regarding presumed service connection for these conditions within 90 days of the announcement. *FACT SHEET: Biden Administration Announces Actions to Address the Health Effects of Military Exposures*, WHITE HOUSE (Nov. 11, 2021) <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/11/fact-sheet-biden-administration-announces-actions-to-address-the-health-effects-of-military-exposures/> [<https://perma.cc/7MCH-N6RY>].

270. *Id.*

271. National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 166th Cong. § 751 (2021).

272. Dignified Burial and Other Veterans' Benefits Improvements Act of 2012, Pub. L. No. 112-260, 126 Stat. 2417 (2013); *see also* 38 U.S.C. § 527.

273. *Id.*

274. *Id.*

275. For instance, the 1996 report strengthened the association between TCDD and the peripheral nervous system. INST. OF MED., VETERANS AND AGENT ORANGE, *supra* note 103.

should require subsequent reviews and reports. Additionally, it should mandate the VA Secretary to compile and analyze all clinical data obtained by the VA regarding examinations and treatment provided to veterans for burn pit exposure, as this would be useful in determining exposure effects. The Agent Orange Act of 1991 included a similar directive.<sup>276</sup>

Vietnam War veterans benefit from two presumptions. As explained in Part II, Vietnam War veterans who prove that they stepped foot in Vietnam or were in the territorial waters during a specified time period are presumed to have been exposed to Agent Orange.<sup>277</sup> Additionally, there is the presumed list of conditions connected to Agent Orange exposure. Veterans exposed to burn pits should likewise benefit from two presumptions. Text beyond a presumed list of conditions should be added to the proposed K2 Veterans Care Act of 2021. The Act should state that servicemembers who spent at least 15 days at Karshi Khanabad Air Base, Uzbekistan, or any other base known to have used burn pits, are presumed to have been exposed to burn pit emissions.

A Senate Veterans' Affairs Committee Hearing further cemented the need for effective legislation. On March 10, 2021, the committee held a hearing called *Military Toxic Exposure: The Human Consequences of War*. Six speakers including professors, doctors, and military veterans provided testimony. Dr. Anthony Szema, Director of International Center of Excellence in Deployment Health and Medical Geosciences, testified that servicemembers who served in Iraq and Afghanistan were exposed to polluted air from burning trash in burn pits.<sup>278</sup> Dr. Szema noted that veterans exposed to burn pits are subject to higher risk of "all-cause mortality, cardiovascular diseases such as heart attacks and strokes, and lung diseases like asthma and COPD."<sup>279</sup> He reached this conclusion because jet fuel containing benzene was used to burn trash, and burn pits burn at a lower temperature than incinerators, which generate more particles.<sup>280</sup>

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276. Agent Orange Act of 1991, H.R. 556, 102d Cong. (1991) (enacted as Pub. L. No. 102-4, 105 Stat. 11 (1991)); *see also* 38 U.S.C.S. § 1116.

277. 38 C.F.R. § 3.307(a)(6)(iii) (2021).

278. *Military Toxic Exposures: The Human Consequences of War: Hearing Before the Subcommittee on Veterans Affairs*, 117th Cong. (2021) (statement of Anthony Szema).

279. *Id.*

280. *Id.*

*B. Presumptive Benefits for Warfighters Exposed to Burn Pits Act*

On March 24, 2021, Congress introduced another bipartisan piece of legislation known as the Presumptive Benefits for Warfighters Exposed to Burn Pits and Other Toxins Act of 2021 (PBWEBP).<sup>281</sup> This legislation was introduced by Congressman Raul Ruiz, who is an emergency physician and the founder and co-chairman of the bipartisan, bicameral Burn Pits Caucus.<sup>282</sup> Like the K2 Veterans Care Act of 2021, the PBWEBP has been introduced, but has not passed the Senate or the House.

This Act would provide a presumption of service connection for certain diseases associated with exposure to toxins, including burn pit emissions, thereby removing the cumbersome burden of proof required for direct-service-connection claims. There is a long list of presumptive conditions found within the proposed PBWEBP including multiple cancers and respiratory illnesses, as well as other ailments. The list includes asthma diagnosed after service, head cancer, neck cancer, respiratory cancer, gastrointestinal cancer, reproductive cancer, lymphoma cancer, lymphomatic cancer, kidney cancer, brain cancer, pancreatic cancer, melanoma, chronic bronchitis, COPD, constrictive or obliterative bronchiolitis, emphysema, granulomatous disease, interstitial lung disease, pleuritis, pulmonary fibrosis, and sarcoidosis.<sup>283</sup> These diseases are devastating and impact veterans' abilities to maintain gainful employment. As such, effective legislation is critical as it gives veterans a chance to obtain financial support while battling their service-connected illnesses or diseases.

Unlike the K2 Veterans Care Act of 2021, the PBWEBP includes a provision for adding diseases to the current list of conditions found within the act.<sup>284</sup> Given the current state of research in this area, this provision opens the door to VA disability benefits for a wide range of veterans with burn pit exposure. As previously detailed, sometimes it takes years for scientists to uncover associations between toxic exposure and health

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281. Presumptive Benefits for War Fighters Exposed to Burn Pits and Other Toxins Act of 2021, S. 952, 117th Cong. (2021).

282. *Congressman Raul Ruiz Introduces Comprehensive, Bipartisan Burn Pits Bill*, RAUL RUIZ (Apr. 5, 2021), <https://ruiz.house.gov/media-center/press-releases/congressman-raul-ruiz-introduces-comprehensive-bipartisan-burn-pit-s-bill> [<https://perma.cc/L9W5-C6YX>].

283. Presumptive Benefits for War Fighters Exposed to Burn Pits and Other Toxins Act of 2021, S. 952, 117th Cong. (2021).

284. *Id.*

consequences. For instance, the list of conditions caused by Agent Orange is still being updated in 2022.<sup>285</sup>

Broader than the K2 Veterans Care Act of 2021, the PBWEBP applies to any veteran who, on or after August 2, 1990, was awarded at least one of eight listed medals.<sup>286</sup> Rather than provide evidence sufficient to prove direct service connection between an adverse health condition and burn pit exposure, veterans would only need to submit proof that they received a campaign medal associated with the Global War on Terror or the Gulf War *and* that they suffer from a qualifying health condition.<sup>287</sup> Campaign medals are awarded to servicemembers who deploy for military operations in designated combat zones or geographical theaters.<sup>288</sup>

The PBWEBP presumption would allow veterans with burn pit exposure and a listed health condition to bypass the current scientific gridlock. The PBWEBP would be even more effective if it were to require the creation of an independent commission to obtain data and recommend additional scientific studies related to burn pit exposure. Such a mechanism is found within the Toxic Exposure in the American Military Act of 2020.<sup>289</sup>

### C. *The TEAM Act*

The TEAM Act, like the K2 Veterans Care Act of 2021 and the PBWEBP, has been introduced in the absence of legislation to specifically address veterans' concerns regarding burn pit exposure and adverse health conditions. It has not passed the House or the Senate. The TEAM Act would: provide VA healthcare eligibility for all veterans exposed to toxic substances, not just burn pit emissions, regardless of their service-connected status; create a framework for establishing presumptive

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285. The National Defense Authorization Act for Fiscal Year 2021 (NDAA), H.R. 6395, 116th Cong. (2021).

286. S. 952.

The list of medals includes: the Afghanistan Campaign Medal; the Armed Forces Expeditionary Medal; the Armed Forces Reserve Medal with M-device; the Armed Forces Service Medal; the Global War on Terrorism Expeditionary Medal; the Inherent Resolve Campaign Medal; the Iraqi Campaign Medal; and the Southwest Asia Service Medal. 38 U.S.C.S. § 1119 (a)(3)(A)–(H).

287. *Congressman Raul Ruiz Introduces Comprehensive, Bipartisan Burn Pits Bill*, *supra* note 282.

288. *Id.*

289. Toxic Exposure in the American Military Act of 2020, S. 4393 116th Cong. (2020).

conditions for service-connection purposes; and generally, improve healthcare for toxic-exposure-related conditions.<sup>290</sup>

The TEAM Act is unique in that it proposes to elevate exposed veterans to Priority Group 6 for purposes of healthcare enrollment, which would allow these veterans to seek healthcare without first proving service connection, either direct or presumed.<sup>291</sup> This is different from receiving VA disability compensation. Based on the text, it appears these veterans would still not be eligible for VA disability compensation without first proving service connection, either direct or presumed, although they would obtain access to healthcare. Per the TEAM Act, the elevated Priority Group 6 status would be given to any veteran who earned certain medals associated with recent-era deployments, who are eligible for the Airborne Hazards and Open Burn Pit Registry, or who the DOD determines has been possibly exposed to toxic substances.<sup>292</sup> In short, it casts a wide net for maximum coverage.

As for VA disability compensation, the TEAM Act sets forth a solid framework for determining presumptive conditions. The TEAM Act would require the VA Secretary to establish an independent commission to advise on questions related to toxic substances and assist in the determination of presumptions of service connection.<sup>293</sup> Additionally, this Act requires annual reports to Congress.<sup>294</sup>

A redeeming and unique aspect of the TEAM Act is its revolutionary approach. In the past, Congress has created legislation for era-specific war wounds. For Vietnam War veterans wounded by Agent Orange, Congress passed the Agent Orange Act of 1991. For Persian Gulf War veterans wounded by unidentifiable illnesses, Congress passed the Persian Gulf War Veterans Act of 1998. For those affected state-side by contaminated drinking water, Congress passed the Camp Lejeune Families Act of 2012. The TEAM Act, however, is written with future generations of veterans in mind. Because it is not limited solely by era or location, it permanently extends healthcare eligibility for veterans with toxic exposures and sets forth a framework for ongoing scientific and medical research.<sup>295</sup>

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290. WOUNDED WARRIOR PROJECT, STATEMENT FOR THE RECORD HOUSE COMMITTEE ON VETERANS' AFFAIRS LEGISLATIVE HEARING 5–6 (2021), [https://www.woundedwarriorproject.org/media/zaskatos/wounded-warrior-project\\_writen-statement-may-5\\_final.pdf](https://www.woundedwarriorproject.org/media/zaskatos/wounded-warrior-project_writen-statement-may-5_final.pdf) [<https://perma.cc/RSE7-NMD9>].

291. *Id.*

292. S. 4393.

293. *Id.*

294. *Id.*

295. WOUNDED WARRIOR PROJECT, *supra* note 290.

A drawback of the TEAM Act is that it could be viewed as overbroad, especially given tight budgetary constraints. The TEAM Act would amend 38 U.S.C. § 1710 to state that any veteran who was exposed to a toxic substance, radiation, or other condition is eligible for hospital care, medical services, and nursing home care for *any illness* if the veteran qualifies for the Airborne Hazards and Open Burn Pit Registry.<sup>296</sup> Servicemembers are eligible for the registry if they were deployed to the Southwest Asia theater of operations any time after August 2, 1990, or deployed to Afghanistan or Djibouti on or after September 11, 2001.<sup>297</sup> Notably, servicemembers do not have to have been exposed to any airborne hazards or have potentially related health consequences to participate in the registry.<sup>298</sup>

The TEAM Act also expands healthcare for any illness to veterans exposed to a toxic substance, radiation, or other condition if they have been awarded any one of six medals.<sup>299</sup> One of the listed medals is the Armed Forces Service Medal (AFSM).<sup>300</sup> This medal is generally awarded to servicemembers who have, after June 1, 1992, participated in a military operation deemed a significant activity when there was no armed opposition or imminent hostile action. It may even be authorized for military operations for which no other medal is appropriate, such as peacekeeping operations and prolonged humanitarian operations.<sup>301</sup> This proposed language could potentially include servicemembers with an AFSM who did not serve in places like Uzbekistan or the Southwest Asia region, where there are known toxins. If servicemembers are injured or develop illnesses or diseases because of their time in service, healthcare needs related to those injuries, illnesses, or diseases should be met. This is true even if positive associations are suggestive rather than definitive due to lack of scientific data. However, without proper limitations, the TEAM

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296. S. 4393.

297. *VA Airborne Hazards and Open Burn Pit Registry*, U.S. DEP'T OF VETERANS AFFS., <https://www.publichealth.va.gov/exposures/burnpits/registry.asp> [<https://perma.cc/E5ES-FSPP>] (last visited Oct. 18, 2021).

298. *Id.*

299. S. 4393.

300. *Id.*

301. OFF. OF UNDER SEC'Y OF DEF. FOR PERSONNEL & READINESS, *Armed Forces SERVICE MEDAL (AFSM) – AUTHORIZED OPERATIONS*, <https://prhome.defense.gov/Portals/52/AFSM%20Approved%20Operations%20-%202019%2007%2001%20v1.pdf> [<https://perma.cc/DN33-LCC6>]. The military operations that have been approved include, and are not limited to, NATO maritime surveillance of cargo through the Adriatic Sea to Yugoslavia in 1992 and NATO enforcement of the no-fly zone over Bosnia and Herzegovina. *Id.*

Act could potentially open the floodgates, thereby drowning a VA healthcare system that is already struggling to keep afloat.

The language used within the TEAM Act is expansive, and as such it will likely be met with hesitation. This is especially true given that other proposed acts specifically limit the class of eligible veterans. For instance, the VA disability benefits under the PBWEBP are for veterans who have qualifying illnesses or diseases related to toxic exposure *and* have at least one of eight medals, indicating the veteran's service period and the region served at, listed in the act.<sup>302</sup>

#### *D. A Comprehensive Act or Rulemaking*

In short, each act has strengths and weaknesses. The act of legislation best suited to protect exposed veterans is one that combines the strongest provisions of the K2 Veterans Care Act of 2021, the PBWEBP, and the TEAM Act. Congress must pool its resources and work together in a bipartisan manner to uphold the promise to care for our servicemembers. Their needs are urgent, so a comprehensive solution must be developed now. A promising step forward is the Honoring Our Promise to Address Comprehensive Toxics Act of 2021, an omnibus bill unveiled on May 26, 2021, by House Committee on Veterans' Affairs Chairman Mark Takano.<sup>303</sup> The Honoring Our Promise to Address Comprehensive Toxics Act of 2021 includes the TEAM Act and has been introduced but not yet passed in the House or in the Senate.

A comprehensive act must, at a minimum, provide preventative and ongoing healthcare to veterans exposed to known toxins such as those from burn pits (similar to what is provided for in the TEAM Act); set forth a list of presumptive conditions based on well-founded albeit emerging scientific and medical research (as seen in the PBWEBP); provide a framework for continuing research, review, and redress (as seen in the TEAM Act); and include eligibility limitations (as seen in the K2 Act of 2021 and the PBWEBP). Ultimately, Congress could deliver a complete care package to veterans by using the best provisions from each of these pending acts.

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302. See generally Presumptive Benefits for War Fighters Exposed to Burn Pits and Other Toxins Act of 2021, S. 952, 117th Cong. (2021).

303. Jenni Geurink, *Chairman Takano: "It's Time America Makes Good on Our Promise to Care for all Veterans Exposed to Toxic Substances,"* HOUSE COMM. ON VETERANS' AFFS. (May 26, 2021), [https://veterans.house.gov/news/press-releases/\\_----chairman-takano-its-time-america-makes-good-on-our-promise-to-care-for-all-veterans-exposed-to-toxic-substances](https://veterans.house.gov/news/press-releases/_----chairman-takano-its-time-america-makes-good-on-our-promise-to-care-for-all-veterans-exposed-to-toxic-substances) [<https://perma.cc/5DSB-99UH>].

If Congress fails to act, the VA should effectuate positive, swift change through its rulemaking process. The Department of Veterans Affairs has used this process before and is fully authorized to act in this capacity. In *National Latino Media Coalition v. FCC*, the D.C. Circuit concluded that “[a] valid legislative rule is binding upon all persons, and on the courts, to the same extent as a congressional statute. When Congress delegates rulemaking authority to an agency, and the agency adopts legislative rules, the agency stands in the place of Congress and makes law.”<sup>304</sup> Rulemaking is beneficial because the VA has institutional knowledge and expertise of its technical programs and Congress retains its legislative power, including oversight and repeal authority.<sup>305</sup> Additionally, if Congress were to create a broad statute, the VA, through rulemaking, could fill in the technical details based on its boots-on-the-ground viewpoint.

The Department of Veterans Affairs might be amenable to using the rulemaking process to benefit veterans. VA Secretary Denis McDonough announced that the VA will begin the rulemaking process to address toxic exposures and create a presumptive list of conditions, to include certain respiratory conditions.<sup>306</sup> The VA based this decision on its internal review of scientific and medical evidence.<sup>307</sup>

Unfortunately, it appears that the VA, at least initially, intends to add only asthma, sinusitis, and rhinitis to a list of presumed conditions.<sup>308</sup> As detailed in Part III, these conditions are only a few of the numerous

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304. Nat’l Latino Media Coal. v. FCC, 816 F.2d 785, 788 (D.C. Cir. 1987).

305. CONG. RSCH. SERV., IF1003, AN OVERVIEW OF FEDERAL REGULATIONS AND THE RULEMAKING PROCESS (2021), <https://fas.org/sgp/crs/misc/IF10003.pdf> [<https://perma.cc/QRV3-24YX>] [hereinafter OVERVIEW OF FEDERAL REGULATIONS].

306. Patricia Kime, *VA Moves to Expedite Benefits for Post-9/11 Veterans’ Asthma, Respiratory Problems*, MILITARY.COM (May 27, 2021), <https://www.military.com/daily-news/2021/05/27/va-expedite-benefits-post-9-11-veterans-asthma-respiratory-problems.html> [<https://perma.cc/5Y3X-QPAZ>] [hereinafter Kime, *VA Moves to Expedite Benefits*].

307. *Id.*

308. *Id.* On August 2, 2021, the Department of Veterans Affairs announced that it will process disability claims for asthma, rhinitis, and sinusitis on a presumptive basis, but only if these conditions manifested within ten years of a qualifying period of military service and the affected servicemembers served in Southwest Asia and certain other areas. *VA to Start Processing Disability Claims for Certain Conditions Related to Particulate Matter*, U.S. DEP’T OF VETERANS AFFS. (Aug. 2, 2021), <https://www.va.gov/opa/pressrel/pressrelease.cfm?id=5699> [<https://perma.cc/88AX-LU3G>]. The presumption is based on findings from VA’s scientific review of particulate matter exposure. *Id.*

conditions linked to burn pit exposure.<sup>309</sup> If the VA intends to act through rulemaking, it should develop a presumed list of conditions in line with the current body of research regarding burn pits and other airborne hazards. The VA should also provide a straightforward means of adding new conditions to a list of presumed conditions. This is particularly important for conditions with a lengthy latent period. As such, the VA should set forth a clear framework for continued scientific and medical research regarding burn pit exposure.

There are some disadvantages to rulemaking. Rulemaking is a long process. As acknowledged by Secretary McDonough, sometimes VA rulemaking takes years.<sup>310</sup> The VA first conducts and completes research. Fortunately, the VA is already at this step in the rulemaking process. In 2019, to increase focus on burn-pit-related health consequences, the VA established the Airborne Hazards and Burn Pits Center of Excellence at its War-Related Illness and Injury Study Center (WRIISC).<sup>311</sup> The WRIISC's primary focus is cardiopulmonary conditions, although it will also assess cancer risks and cognitive dysfunction.<sup>312</sup>

The WRIISC has focused mainly on cardiopulmonary symptoms because of reports that veterans suffer pulmonary symptoms, asthma, and unexpected conditions after their deployments to Southwest Asia.<sup>313</sup> According to one study, 80 soldiers who were evaluated from 2004 to 2009 showed a high prevalence of constrictive bronchiolitis, an illness that rarely affects healthy, young adults.<sup>314</sup> In this study, there was a strong

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309. See generally *Learn About Dioxin*, *supra* note 172; *Chairman Lynch Seeks Information Related to Hazardous Conditions at Uzbekistan Air Base*, STEPHEN F. LYNCH (Jan. 14, 2020), <https://lynch.house.gov/2020/1/chairman-lynch-seeks-information-related-hazardous-conditions-uzbekistan-air-base> [<https://perma.cc/5SV8-K62B>]; NAT'L ACADS. OF SCIS., ENG'G & MED., *supra* note 204, at 26; Szema et al., *Proposed Iraq/Afghanistan War-Lung Injury*, *supra* note 194.

310. Kime, *VA Moves to Expedite Benefits*, *supra* note 306.

311. Patricia Kime, *After Mandate from Congress, VA Opens Research Center for Burn Pit-Related Illness*, MILITARY.COM (Aug. 23, 2019), <https://www.military.com/daily-news/2019/08/23/after-mandate-congress-va-opens-research-center-burn-pit-related-illnesses.html> [<https://perma.cc/L3EZ-L8KP>].

312. *Id.*

313. *VA Airborne Hazards & Open Burn Pit Registry*, U.S. DEP'T OF VETERANS AFFS., <https://www.warrelatedillness.va.gov/education/factsheets/airborne-hazards-and-open-burn-pit-registry-for-providers.asp> [<https://perma.cc/M6ZB-6MQK>] (last updated June 3, 2021).

314. Matthew S. King, M.D. et al., *Constrictive Bronchiolitis in Soldiers Returning from Iraq and Afghanistan*, 365 *NEW ENG. J. MED.* 222, 227–28 (2011).

association between constrictive bronchiolitis and exercise limitations in veterans who had served in Southwest Asia.<sup>315</sup>

This study focused further on 38 servicemembers whose biopsies showed constrictive bronchiolitis.<sup>316</sup> All of these servicemembers had satisfied the Army Physical Fitness Test standards before deploying to Southwest Asia.<sup>317</sup> Of these servicemembers, 25 were lifetime non-smokers, 7 were active smokers, and 6 were former smokers.<sup>318</sup> Although researchers only expected to find constrictive bronchiolitis in a group of servicemembers who had prolonged exposure to sulfur dioxide related to a well-known Mosul mine fire, they found exercise limitations in a group without exposure to this fire.<sup>319</sup> Researchers found this concerning because another known source of exposure is open-air burn pits.<sup>320</sup>

The Department of Veterans Affairs is continuing its research at the WRIISC as veterans continue to receive troubling diagnoses. Additionally, for servicemembers previously located at K2, the National Defense Authorization Act for Fiscal Year 2021 will require DOD to conduct a study regarding associations between toxins and adverse health conditions.<sup>321</sup> The DOD must present the findings to the Committees of Armed Services no later than 180 days after enactment.<sup>322</sup> The Department of Veterans Affairs has not projected when its burn pit research might be considered complete.

Another potential drawback of rulemaking is that the VA rulemakers are not accountable to a constituency.<sup>323</sup> Of course, there are procedural statutes like the APA that govern the rulemaking process. Additionally, there is public involvement. This involvement, however, is limited. The VA only needs to address the most frequently made comments, not all, in response to rulemaking. The VA is also allowed to use its discretion.

If the VA drafts a proposed rule, which has not happened yet, based on its toxic exposure research, the draft will be made available to the public. It will remain open to public review and comment for up to 180 days.<sup>324</sup> After this period, the VA may change the proposed rule in

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315. *Id.* at 227.

316. *Id.* at 223.

317. *Id.* at 225.

318. *Id.*

319. *Id.* at 227–28.

320. *Id.*

321. National Defense Authorization Act for Fiscal Year 2021, H.R. 6395, 166th Cong. § 751 (2021).

322. *Id.*

323. OVERVIEW OF FEDERAL REGULATIONS, *supra* note 305.

324. *Id.*

accordance with public comments. After edits are made, the proposed rule may be offered again for public review and comment. Lastly, the VA prepares the final draft and releases it. The rule is then incorporated into the Code of Federal Regulations.<sup>325</sup> Again, rulemaking is a workable option if Congress either fails to act or passes a vague act—one that would require the VA to fill in technical details. Given the potential drawbacks, Congressional action might better benefit veterans.

#### CONCLUSION

Approximately 3.5 million servicemembers have been exposed to burn pits and other airborne hazards while serving overseas.<sup>326</sup> After serving in toxic environments, some of which were known by the government to be hazardous, countless servicemembers have been diagnosed with conditions like rare cancers. There is no presumed list of conditions tied to burn pit exposure, other than the short list recently created by the VA, so these servicemembers do not receive VA disability compensation unless they can prove direct service connection. The scientific and medical communities remain gridlocked as servicemembers sit at a standstill on the road to redress. Without a comprehensive, presumptive list of conditions, veterans must show evidence of a current disability, evidence of an in-service incurrence or aggravation of a disease or injury, and evidence of a clear connection between the in-service incurrence or aggravation and the current disability.<sup>327</sup> Unable to prove direct service connection, in large part due to a lack of scientific and medical research, these servicemembers are in dire straits. Long after they lace up their combat boots for the last time, they struggle to fight the cumbersome VA disability benefits process. Too often, these servicemembers are defeated. The VA has denied more than 75% of veterans' burn pit claims for disability benefits.<sup>328</sup>

Servicemembers enter the AVF, bravely and willingly taking on the risks of serious bodily harm or death. These risks will presumably arise from active combat with a declared enemy, foreign or domestic. Servicemembers do not anticipate being forcibly exposed to burn pit or other airborne toxins while carrying out their service obligations. After

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325. *Id.*

326. *Burn Pit Veterans in the Dark on Coronavirus Risk*, *supra* note 7.

327. *See* Caluza v. Brown, 7 Vet. App. 498 (1995).

328. Justin Kase Conder, *Veterans Face Uphill Battle to Receive Treatment for 'Burn Pit' Exposure*, CBS NEWS (Apr. 12, 2021), <https://www.nbcnews.com/news/military/veterans-face-uphill-battle-receive-treatment-burn-pit-exposure-n1263862> [<https://perma.cc/RZ89-L37B>].

surviving such exposures in warzones, servicemembers should not be asked to wage war against a bloated bureaucracy. The promise of care should be upheld. Congress, or alternatively the VA, should act to provide preventative and ongoing health care to veterans exposed to known toxins like those from burn pits, create a list of presumptive conditions based on well-founded scientific research, set forth a framework for continued scientific research, and fashion proper eligibility limitations to prudently maintain VA's budget.