

**STATEMENT OF  
DR. RALPH L. ERICKSON  
CHIEF CONSULTANT, POST DEPLOYMENT HEALTH SERVICES  
VETERANS HEALTH ADMINISTRATION  
DEPARTMENT OF VETERANS AFFAIRS  
BEFORE THE  
HOUSE COMMITTEE ON VETERANS' AFFAIRS**

**June 7, 2018**

Good afternoon Chairman Dunn, Ranking Member Brownley, and Members of the Subcommittee. I appreciate the opportunity to discuss the ongoing research and actions the Department of Veterans Affairs (VA) is taking to identify and care for Veterans who were exposed to burn pits during service in the Armed Forces. I am accompanied today by Dr. Drew Helmer, Director, War-Related Illness and Injury Study Center, New Jersey (WRIISC – NJ) and VA's Airborne Hazards Center of Excellence (AHCE).

**Introduction**

Exposure to open-air burn pits and airborne hazards during deployment may be associated with adverse health consequences. The collaborative and ongoing efforts of VA, the Department of Defense (DoD), and our partners in academia in the areas of clinical care, research, education, and communications are being fully employed to identify Veterans who may be at risk and to investigate and quantify potential short-term or long-term adverse health effects that may be associated with their exposure to contaminants or toxic substances from open-air burn pits and other airborne hazards. Information obtained through these collective efforts helps inform study designs and, in time, helps advance clinical practice and standards, as medical practice continually

evolves based on new knowledge. Simply put, the ultimate aim of these combined efforts is to place us in a position to know how to better limit future deployed units' exposure to potentially harmful contaminants and toxic substances and to prevent the clinical manifestation of any associated diseases, or at least enable us to clinically manage and control progression of any confirmed associated adverse health outcomes in affected individuals.

Open burn pits were used as a common waste disposal method at military sites in Iraq and Afghanistan. They have historically been used in other parts of the world by the military, but the contents of what was burned in these conflict areas, as well as the Southwest Asia environment itself with dust, particulate matter, burning oil wells, and general air pollution make these recent exposures more complex.

On January 10, 2013, Section 201 of Public Law 112-260 was enacted, requiring VA to establish and maintain an open burn pit registry for certain eligible individuals who may have been exposed to toxic airborne chemicals and fumes caused by open burn pits. As implemented and enhanced by VA, the registry was designed to include Servicemembers who deployed to the Southwest Asia theater of operations (as that term is defined in 38 Code of Federal Regulations § 3.317(e) (2)) on or after August 2, 1990, or on or after September 11, 2001, to include Afghanistan and Djibouti. On June 16, 2014, in response to this mandate, Veterans Health Administration's (VHA) Office of Public Health (now managed by the Office of Post Deployment Health Services) established the Airborne Hazards Open Burn Pit Registry (AHOBPR) for eligible Servicemembers and Veterans. At present, this is VA's fastest growing registry and has over 143,000 participants as of June 2018.

Smoke from open-air burn pits contained substances that may have adverse health effects. Separate and distinct from potential open-air burn pit hazards, ambient particulate matter (PM) was identified as a potential threat to respiratory health early in Operation Iraqi Freedom (OIF). Sampling conducted by preventive medicine personnel deployed to the United States Central Command area of operation typically demonstrated levels of PM (sometimes referred to as particle pollution in public communications) above those the U.S. Environmental Protection Agency's National

Ambient Air Quality Standards, which are designed to protect sensitive populations with an adequate margin of safety. A major contributor to ambient PM in Southwest Asia was re-suspension of dust and soil from the desert floor. During Desert Shield/Desert Storm, Operation Enduring Freedom (OEF), Operation New Dawn (OND), and OIF, open-air burn pits were used with high frequency. Burn pit emissions contributed to the total burden of air pollutants, including gases and PM, to which deployed personnel were exposed.

### **Potential Long-Term Health Effects of Exposure to Open Burn Pits and Airborne Hazards**

A 2011 Institute of Medicine Report on “Long-term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan” determined that there is “limited/suggestive evidence of an association between exposure to combustion products and reduced pulmonary function” in the subject populations. The evidence for an association between the development of specific respiratory diseases and exposure to combustion products was found to be inadequate or insufficient. Currently, it is unknown if reduced pulmonary function is a consequence of exposure to PM during deployment or if combustion products exposure during deployment is a risk factor for the development of clinical disease later in life.

VA’s Post Deployment Health Services (PDHS) is currently working to match the health records of participants in AHOBPR. This will be a long-term review as many disease processes, such as cancer or chronic obstructive pulmonary disease, may have a long latency period. As mentioned, this is the VA’s fastest growing registry, and it was recently critically evaluated by the National Academy of Medicine (NAM). NAM noted that a limitation of this registry is that it is self-reported information and therefore subject to inaccuracies. DoD is making a concerted effort to encourage all eligible Servicemembers who are separating from the service to enroll in the registry during their transition period. Also, the optional Airborne Hazards registry physical examination allows an objective recording of physical manifestations of a condition/illness and current health status. PDHS sends out approximately 5,000

emails and letters a month to encourage completion of the medical exam. An estimated 3.7 million Veterans and Servicemembers are eligible to join the registry.

PDHS continues to review and conduct original research with AHCE located at WRIISC – NJ. Additionally, PDHS has requested that the next consensus report from NAM in the series “Gulf War and Health,” (Volume 12) review what is known about the long-term health effects of airborne hazards. We anticipate that these efforts will lead to better understanding of these exposures.

VA and DoD continue to research possible relationships between exposure to open-air burn pits and cardiopulmonary symptoms, such as shortness of breath or decreased exercise tolerance. An illness of particular interest and concern is constrictive bronchiolitis. Constrictive bronchiolitis is a chronic debilitating lung condition and can have many causes including chemical and other environmental exposures, organ transplant rejection, medications, infection, and smoking. Due to an early report of a case series of possible constrictive bronchiolitis, there has been great interest in this condition as a potential explanation for the cardiopulmonary symptoms of Servicemembers after deployment. At this time, there is little evidence that the diagnosis of constrictive bronchiolitis accounts for more than a tiny portion of the Veterans with symptoms after deployment. There is a growing consensus that the cardiopulmonary symptoms experienced by some Veterans after deployment to Iraq and Afghanistan are due to a heterogeneous collection of conditions that may be either triggered or exacerbated by a variety of contributing factors. VA is committed to continued research to identify any statistically significant associations between this type of exposure and the onset of constrictive bronchiolitis, including the mechanism of injury and dysfunction, ultimately leading us to the identification of more targeted effective treatments for Veterans with associated cardiopulmonary symptoms (beyond what is now available to treat them symptomatically).

### **Current and Anticipated Future VA Actions**

VA and DoD Subject Matter Experts (SME) meet monthly to discuss and plan joint actions for the study of deployment-related exposures and their possible

association with subsequent adverse health conditions. Though many deployment-related topics are discussed, airborne hazards and open-air burn pit-related issues are a frequent agenda item. In particular, the VA/DoD Health Working Group Airborne Hazards Joint Action Plan, in support of the VA/DoD Joint Executive Council Strategic Plan, is updated annually by this group.

VA and DoD are also working jointly to improve real-time exposure monitoring of deployed forces and to fully capture of these data in the Individual Longitudinal Exposure Record (ILER) currently under development. Once fully fielded, ILER will match a Servicemember's deployments by date and location with the exposures they have experienced.

In May 2017, VA and DoD gathered 50 SMEs and held the 4<sup>th</sup> Airborne Hazards Symposium to address the health effects of airborne hazards exposure during deployment to Iraq and other countries in the Southwest Asia Theater of Operations. VA and DoD speakers provided updates on the current status of the environmental exposure assessment, clinical care, surveillance, education, outreach, and research on airborne hazards. Representatives from Veterans Service Organizations provided insight on the needs of Veterans and made recommendations on VA/DoD efforts. Experts actively worked in breakout sessions to identify the challenges, priorities, and gaps in each of these areas. These SMEs also reviewed recommendations from NAM report, "Assessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry, 2017." This Symposium has allowed VA to develop a cogent direction regarding innovative approaches to research and clinical care.

AHCE at WRIISC – NJ is located at the East Orange Campus of the VA New Jersey Health Care System. AHCE was established in 2013 to provide an objective and comprehensive evaluation of Veterans' cardiopulmonary function, military and non-military exposures, and health-related symptoms for those with airborne hazard concerns. As planned, AHCE has expanded to become the VA's only comprehensive clinical assessment program for airborne hazards concerns of deployed Veterans. However, AHCE reach extends well beyond innovative clinical evaluations, as AHCE has leveraged its experience to educate providers (e.g., national webinars, symposia,

fact sheets) and engage the research community (e.g., conference presentations, invited research discussions, publications, and grants).

Regarding clinical care, AHCE at WRIISC – NJ will link the self-reported responses from the AHOBPR online questionnaire to VHA clinical data. Building on this information, the AHCE team will screen targeted participants and gather additional non-VHA medical records. AHOBPR participants with high-priority conditions and exposures will be invited in for a comprehensive in-person clinical evaluation with the option to volunteer for related research projects.

### **Scientific Research Regarding Open-Air Burn Pit Exposure**

The Cooperative Studies Program within the VA Office of Research and Development (ORD) approved funding in 2016 for a large cohort study to examine the potential effects of PM exposure on lung function. The aim of the proposed study is to assess the association of previous land-based deployments to Iraq, Afghanistan, and neighboring regions with current measures of pulmonary health among a study cohort of 4,500 Veterans. The cohort will include a representative sample of U.S. Army, Marine Corps, and Air Force military personnel who served during the OEF/OIF/OND era, between October 2001 and December 2014, and who have separated from the active military.

VA and DoD are working together and in partnership with various private institutions on studies regarding possible adverse health effects related to exposure to open-air burn pits as well as on the use and effectiveness of AHOBPR. A few of these studies include:

- The National Health Study for a New Generation of U.S. Veterans: This population-based epidemiologic study of 22,000 Veterans will determine if the Veterans of OIF and OEF have reported an increased prevalence of health problems and behavioral risks following deployment in combat theaters relative to non-deployed Veterans.
- The Comparative Health Assessment Interview: This study is currently surveying Veterans who served in Iraq and Afghanistan, Veterans who served elsewhere,

and a comparison group of civilians to assess environmental and deployment related exposures and health outcomes. Data analysis will begin in early 2019 with preliminary results in late 2019 or 2020.

- The Pulmonary Health and Deployment to Iraq and Afghanistan Objective: This study is intended to assess the association of deployment and potential exposure to airborne hazards during deployment with current measures of respiratory health. The project is funded for May 2016 through September 2022.
- The Effects of Deployment Exposures on Cardiopulmonary and Autonomic Function: The study evaluated cardiopulmonary function in deployed OEF/OIF Veterans versus those deployed elsewhere to determine whether deployment related exposures alter cardiovascular autonomic control.
- The Millennium Cohort Study: Led by DoD, this is the largest prospective study in U.S. military history. It is designed to assess the long-term health effects of military service both during and after service time; 70 percent of the enrollees are now Veterans.
- The Million Veterans Program: This is a VA ORD-funded project that is collecting demographic, medical, and genetic data on 1 million Veterans who receive their care through VA. This study will be invaluable in evaluating the genetic components of respiratory disease risk.

As noted above, more than 143,000 Veterans are enrolled in AHOBPR and an estimated 3.7 million Veterans and Servicemembers are eligible to join. With continued outreach, VA hopes the number enrolling will climb and more individuals will opt to have the Airborne Hazards medical examination, which will allow us to obtain more data. These data will inform current and future study designs and ultimately translate into the clinical sphere, helping us to more fully address the health-related concerns of potentially affected Veterans. Their concerns are, of course, shared by VA, DoD, and Congress.

Investigators at VA ORD PDHS and AHCE have authored or co-authored important peer-reviewed published manuscripts related to the respiratory health of Iraq and Afghanistan Veterans, including comprehensive literature reviews, evaluations of

health and exposure concerns, relationships between pulmonary function and deployment-exposure, association of respiratory and cardiovascular conditions with burn pit emissions, and a unique pattern of pulmonary function abnormalities. AHCE researchers collaborate frequently with research entities, such as Northwell Health Systems and National Jewish Health, on joint projects, including presentations at national medical professional meetings.

A bibliography of these scientific articles and other research is submitted to the Committee as an appendix to this testimony.

## **Conclusion**

VA is committed to the health and well-being of our Veterans and is dedicated to working with our Interagency and academic partners determine the best care possible for our Veterans. VA acknowledges the many sacrifices Veterans make in service our country and remains committed to outreach and research on potential adverse health effects associated with exposure during deployment to open-air burn pits and airborne hazards. This information is needed to improve therapeutic approaches to care. VA also remains committed to conduct aggressive outreach about AHOBPR to eligible populations to ensure that these individuals are aware of the benefits of participating in AHOBPR and are informed about the Departments' efforts, both joint and separate, to determine if such exposures are associated with any specific adverse health effects.

It is critical that we continue to move forward with the current momentum and preserve the gains made thus far. To this end, your continued support is essential. Mr. Chairman, this concludes my testimony. My colleagues and I are prepared to answer any questions.