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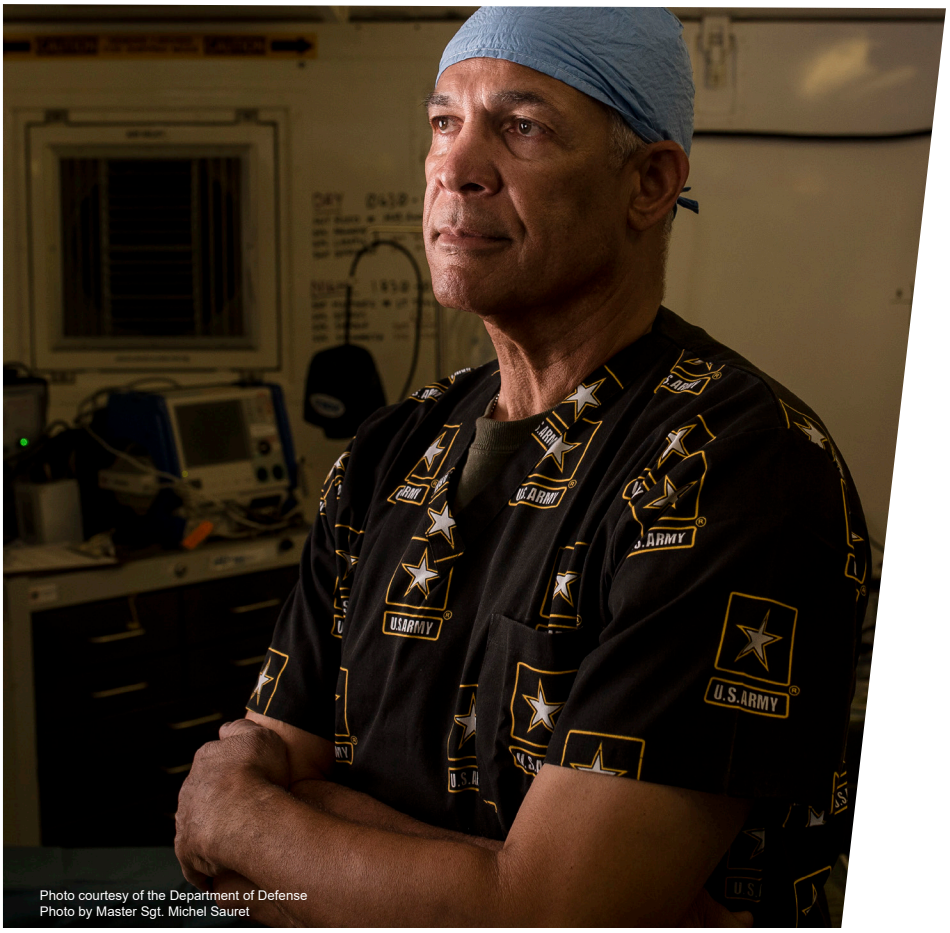

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Toxic Exposure Medical Evaluation

DoD Health Care Provider **CLINICAL TOOLBOX**

Updated October 2025


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Photo by Master Sgt. Michel Sauret

Be Prepared to Treat Service Members Exposed to Airborne Hazards, Such as Open Burn Pit Smoke

The Department of Veterans Affairs (VA) developed the Airborne Hazards and Open Burn Pit Registry to better understand the potential health effects of exposure to airborne hazards during military service, support ongoing research, and inform future decisions around airborne hazards to keep service members and veterans healthy and safe. This toolbox contains background information on airborne hazards and the registry, guidance for conducting a medical evaluation associated with environmental exposure concerns, and resources for you to review and share with service members and other health care providers.

Overview of Registry

Service members who have been exposed to airborne hazards, such as open burn pit smoke, while serving may be at risk for short- and long-term health issues. After deployment to locations with open burn pits and other pollution sources, service members have returned with a range of mild to serious respiratory illnesses. At this time, there are no biomarkers specific to the environmental exposure-related health concerns of service members who deployed to eligible theaters of operations (listed below).

In June 2014, VA launched the Airborne Hazards and Open Burn Pit Registry in response to concerns that veterans were experiencing a range of respiratory illnesses possibly associated with exposure to burn pits while serving overseas. The registry automatically enrolls eligible service members and veterans who may have potentially been exposed to airborne hazards (such as smoke from burn pits, oil well fires, or pollution) during deployment to eligible regions. VA determines eligibility for the registry based on deployment information from the Department of Defense (DoD).

Inclusion in the registry does not affect access to VA health care or compensation benefits. Service members and veterans may opt out of the registry by going to https://vethome.va.gov/BurnPitRegistryOptOut and submitting an opt out inquiry.

Background of Airborne Hazards and Open Burn Pits

The use of open burn pits was a common practice to dispose of solid waste at military sites outside of the U.S. such as in Iraq and Afghanistan. Material burned may have included hazardous waste, medical waste, tires, petroleum products, and plastics, as well as substances known to generate carcinogens and other harmful substances through the combustion process. In addition, elevated levels of particulate matter, including dust from the desert and from industrial activities and other man-made sources, contributed to poor air quality in many locations.

In September 2020, the National Academies of Science, Engineering, and Medicine (NASEM) published a report evaluating scientific evidence on 27 different respiratory health outcomes. NASEM found there was limited or suggestive evidence of an association between airborne hazard exposure and respiratory symptoms (chronic cough, shortness of breath, and wheezing). The report noted there was inadequate evidence of an association between airborne hazard exposure and the remaining 26 health outcomes. DoD and VA continue to support and fund research studies to determine the short- and long-term health effects of airborne hazards.

Eligibility

Veterans and service members – both living and deceased – who deployed to the Southwest Asia theater of operations,* Egypt, or Somalia, from August 2, 1990, to August 31, 2021, or Afghanistan, Djibouti, Jordan, Lebanon, Syria, Uzbekistan, and Yemen, from September 11, 2001, to August 31, 2021, are automatically included in the Airborne Hazards and Open Burn Pit Registry.

*As outlined in 38 Code of Federal Regulations §3.317 (e)(2), the Southwest Asia theater of operations refers to 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 locations.


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Photo by Master Sgt. Michel Sauret

Conducting the Medical Evaluation

Active duty service members, including activated Reserve and Guard, are encouraged to contact their local military hospital or clinic to schedule an appointment. Army National Guard, Air National Guard, and Reserve members, whether discharged or still serving, can schedule an appointment if they have health concerns related to military environmental exposures through VA. Veterans and inactive/separated National Guard members and Reservists with health concerns about their military environmental exposures may also contact their local VA Environmental Health Coordinator to schedule an exam.

A list of Environmental Health Coordinators can be located at: https://www.publichealth.va.gov/exposures/coordinators.asp.

Providers should start by discussing the service member's medical history with an emphasis on occupational/environmental exposures. Providers should assess the intensity and specific focus of concern of the individual, bearing in mind that patients seeking medical attention may have a variety of symptoms and exposure concerns. The provider should also review the patient's health assessment forms and can access those forms in the Electronic Health Record.

The provider should discuss and document the service member's exposures in as much detail as possible.

The toxic exposure medical evaluation should be documented in MHS GENESIS (MHS GEN) following the SOAP (Subjective, Objective, Assessment, Plan) note format.

Subjective:

Overview: Exposure history may impact treatment and management of related medical conditions or problems. In addition, exposure history documented in MHS GEN may also be considered by the Department of Veterans Affairs (VA) in adjudicating disability claims.

Active-Duty Exposure History: In addition to a history of present illness for the patient's chief complaint(s) or concern(s), relevant active-duty exposure history should be documented in MHS GEN within the body of the note in the subjective section. This should include but not be limited to responses to the following questions:

- What was the exposure (suspected or known)?
- When did it occur?
- What was the duration and frequency?
- Where did it occur (geographic location, in-garrison, deployed, etc.)?
- What was the amount of the exposure (suspected or known)?
- What was exposure route (airborne, dermal, ingestion, etc.)?
- What was military occupation at time of exposure?

Individual Longitudinal Exposure Record (ILER): Additional exposure information is available in the ILER. MHS GENESIS has an ILER link that will produce an individualized exposure summary report for the patient being seen. Instructions on how to use this link are available on the MHS GENESIS ILER tip sheet at Individual-Longitudinal-Exposure-Data-(ILER)-Summary-in-MHS-GENESIS-Tip-Sheet.pdf. For additional questions, contact the MHS GENESIS help desk. Providers can also obtain an ILER account at https://iler.csd.disa.mil/iler. ILER must be accessed every 30 days for the account to remain active, but an ILER account is not needed to use the ILER link in MHS GENESIS.

The ILER exposure summary report generated through the MHS GENESIS link cannot be directly saved in MHS GEN as part of the encounter note. As such, relevant ILER exposure information needs to be manually documented in the encounter note. Documentation methods include cutting and pasting relevant information from the ILER summary into the body of the encounter note or creating a PDF of the summary and attaching to the encounter note. It should be noted that ILER information cannot be updated by the provider if a patient feels the ILER reporting is incorrect or incomplete.


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Other Exposure History: Identify, document and consider toxic exposures that a patient may have had when not on active duty. This includes but is not limited to those exposures related to civilian occupations, hobbies, and non-active-duty travel.

Current or past medical problems: The patient's medical history should be reviewed as per routine with a focus on identifying medical problems that might be related to a toxic exposure. Examples include but are not limited to respiratory problems after an airborne exposure or skin problems after a dermal exposure.

Presumptive PACT Act Diagnoses: The patient's medical history should be reviewed as per routine with a focus on identifying medical conditions that might be a presumptive diagnosis or condition that is eligible for compensation under the PACT Act. This includes: brain cancer, gastrointestinal cancer of any type, glioblastoma, head cancer of any type, kidney cancer, lymphatic cancer of any type, lymphoma of any type, melanoma, neck cancer of any type, pancreatic cancer, reproductive cancer of any type, respiratory (breathing related) cancer of any type, asthma that was diagnosed after service, chronic bronchitis, chronic obstructive pulmonary disease (COPD), chronic rhinitis, chronic sinusitis, constrictive bronchiolitis or obliterative bronchiolitis, emphysema, granulomatous disease, interstitial lung disease (ILD), pleuritis, pulmonary fibrosis, and sarcoidosis.

Objective:

Physical Examination: A focused physical examination should be performed based on symptoms, medical history, and the characteristics of possible toxic exposure(s). If there are no specific areas of concern, a general examination should be done covering the major organ systems (i.e. cardiovascular, pulmonary, neurologic, dermatologic).

Assessment:

Presumptive Diagnoses/Conditions: Ensure that possible presumptive PACT Act diagnoses or conditions are clearly identified as such in the body of the note in the assessment section.

Service Connection: Service connection determinations are made by adjudicators at the VA. There are no requirements or guidance for DHA MHS providers to opine on service connection, however it is recommended that DHA MHS providers refrain from opining on service connection. It is acceptable to document that a patient believes a service connection exists between an exposure and a diagnosis or condition.

Plan:

Treat the patient: Develop or continue treatment plans as indicated for active medical problems. For newly identified medical problems, work up the problem like any new medical problem.
Ancillary tests or imaging: No specific testing or imaging is required. Testing and imaging should be clinically indicated. Examples include but are not limited to pulmonary function testing or chest X-ray for respiratory problems after an airborne exposure.

When conducting the medical exam, it is highly recommended that providers annotate the clinical record with the following:

- Use the following International Classification of Disease (ICD) 10 code:
  - Z77.128: Exposure to environmental contaminants
- Use the following Preventive Medicine Evaluation and Management (E&M) codes as applicable:
  - 99385 Initial Comp Preventive Med 18 to 39 years New
  - 99386 Initial Comp Preventive Med 40 to 64 years New
  - 99387 Initial Comp Preventive Med 65+ years New
  - 99395 Periodic Comp Preventive Med 18 to 39 years Est
  - 99396 Periodic Comp Preventive Med 40 to 64 years Est
  - 99397 Periodic Comp Preventive Med 65+ years Est
- Any additional applicable diagnostic or symptom codes


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Clinical Considerations

While there is no single approach to evaluating patients with dyspnea and normal spirometry, Appendix C of the Borden Institute book on Airborne Hazards Related to Deployment proposes the following evaluation framework. Considerations should be given to establishing the presence or absence of airway hyperactivity and upper airway disorders as well as ruling out parenchymal lung disease.

Potential Evaluation of Patients with Chronic Symptoms

Proposed Test	Considerations
Spirometry Post-BD	Review spirometry for reduction in forced expiratory volume in one second (FEV1); 12% increase in post-bronchodilator (post-BD) diagnostic of airway hyperactivity (AHR)
Spirometry w/symptoms	Intermittent nature of asthma may require repeat spirometry when patients are symptomatic
Chest Radiograph	Will be normal in most patients; helpful to eliminate pulmonary infiltrates, effusions, or mediastinal disease
Complete Blood Count	Rule out anemia, especially in females
Inspiratory FVL	Review the inspiratory flow volume loop (FVL) on all spirometry exams for truncation or flattening
Exercise Laryngoscopy	Presence of abnormal FVL or history of inspiratory wheezing or noisy breathing; diagnostic for vocal cord dysfunction
Bronchoprovocation Testing	With normal spirometry, important to rule out underlying airway reactivity such as exercise-induced bronchospasm (EIB)
Methacholine	Most common test used for AHR with good negative predictive value; diagnostic for EIB with associated exercise symptoms
Eucapnic Hyperventilation	Equivalent to methacholine for diagnosing AHR, but requires 15% decrease in FEV1
Exercise Spirometry	Poor predictability compared to other methods and may not reproduce symptoms in laboratory setting
Impulse Oscillometry	Newer modality that measures airway resistance and may identify AHR based on reduction in post-BD values
High Resolution CT	May identify subclinical lung disease, airway trapping or bronchiectasis; low diagnostic yield in this population
Cardiopulmonary Exercise Testing	Primarily used to assess patient's ability to exercise and measure VO2 max; given limited reference values and low suspicion for cardiac disease, may not identify specific cause
Allergy Evaluation	Consideration for allergy testing in patient with other atopic symptoms such as atopic dermatitis, allergic rhinitis
Cardiology Evaluation	Very low likelihood of cardiac disease in a younger population; referral should be based on physical exam findings
Electrocardiogram	Numerous nonspecific changes found in younger population and rarely diagnostic
Echocardiogram	Numerous nonspecific changes found in younger population and rarely diagnostic


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Schematic of DoD Medical Follow-Up

An active duty service member, including an activated Reserve and Guard member, becomes aware of the registry through their health care provider or via outreach efforts such as direct mail communications, social media content, events/briefings, or Health.mil/AHBurnPitRegistry.

The service member accesses the Airborne Hazards and Open Burn Pit Registry at https://veteran.mobilehealth.va.gov/AHBurnPitRegistry and confirms they have been automatically enrolled in the registry.

The service member requests a medical exam at their local military hospital or clinic to specifically address health concerns related to the military environmental exposures.*

During the service member's medical exam, the health care provider:
- Determines the patient's concern or chief complaint
- Documents pertinent positives in the medical record
- Takes a medical history with an emphasis on occupational/ environmental exposures, especially airborne hazards and smoking history
- Accesses and reviews the patient's health assessment forms in the Electronic Health Record

If clinically indicated, the health care provider may:
- Perform a physical exam, with focus and extent determined by symptoms and/or health concerns
- Order a chest radiograph, spirometry, and/or further diagnostics based on clinical symptoms
- Refer the service member to a pulmonary specialist for further evaluation

When conducting the medical exam, it is highly recommended that providers annotate the clinical record with the following:

- Use the following International Classification of Disease (ICD) 10 code:
  - Z77.128: Exposure to environmental contaminants
- Use the following Preventive Medicine Evaluation and Management (E&M) codes as applicable:
  - 99385 Initial Comp Preventive Med 18 to 39 years New
  - 99386 Initial Comp Preventive Med 40 to 64 years New
  - 99387 Initial Comp Preventive Med 65+ years New
  - 99395 Periodic Comp Preventive Med 18 to 39 years Est
  - 99396 Periodic Comp Preventive Med 40 to 64 years Est
  - 99397 Periodic Comp Preventive Med 65+ years Est
- Any additional applicable diagnostic or symptom codes

**Retirees and National Guard and Reserve Component members (separated or still serving) are managed by VA*


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Photo by Master Sgt. Michel Sauret

Provider Resources

This section contains resources DoD providers can review to learn more about the Airborne Hazards and Open Burn Pit Registry and pass along to colleagues or patients. Click links to download materials or to view more information and visit Health.mil/AHBurnPitRegistry for DoD's latest outreach and education materials.

Materials for Providers:

- Airborne Hazards Fact Sheet for Providers (VA)
- Deployment-Related Respiratory Disease Toolkit for Providers (VA)

Websites:

- Airborne Hazards and Open Burn Pit Registry (VA)
- MHS: Airborne Hazards and Open Burn Pit Registry (MHS)
- Airborne Hazards and Burn Pit Exposures (VA)
- Directory of Environmental Health Coordinators (VA)

Reports and General Information:

- Reassessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry (NASEM, 2022)
- Respiratory Health Effects of Airborne Hazards Exposures in the Southwest Asia Theater of Military Operations (NASEM, 2020)
- Open Burn Pit Report to Congress (DoD, April 2019)
- Women Veterans Enrolled in the Airborne Hazards and Open Burn Pit Registry (AHOBPR)- Exposures and Self-Reported Cardiovascular Condition (VA)
- Racial/Ethnic Minority Veterans –A Focus Within the Airborne Hazards and Open Burn Pit Registry (AHOBPR) (VA)
- The Airborne Hazards and Open Burn Pits Registry (AHOBPR)- A snapshot of participating Gulf War (Early Deployers) and Post-9/11(Late Deployers) Veteran populations (VA)
- DoD Instruction 4715.19, Use of Open-Air Burn Pits in Contingency Operations (DoD, November 2018)
- DoD Needs to Fully Assess the Health Risks of Burn Pits (Government Accountability Office, June 2018)
- Assessment of VA Airborne Hazards and Open Burn Pit Registry (NASEM, 2017)
- Airborne Hazards Related to Deployment (Office of Surgeon General, Borden Institute, 2015)
- Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan (Institute of Medicine [now NASEM], 2011)
- VA Airborne Hazards and Open Burn Pits Registry 10-Year Anniversary Symposium (VA)
- Airborne Hazards and Burn Pits Center of Excellence 5-Year Report (VA)

Training:

- DHA-US035 Airborne Hazards and Open Burn Pit Registry Overview Training Course for Providers
- WRIISC Module 2: Airborne Hazards (VA)
- WRIISC-HOME: Case Study 2: Clearing the Air: Understanding Airborne Hazards and Open Burn Pits
- WRIISC-HOME: Southwest Asia Deployment Associated Lung Disease: Diagnostic Challenges (Intermediate) (VA)
- WRIISC-HOME: Tips for Working with Veterans with Airborne Hazards Concerns (VA)
- WRIISC-HOME: Understanding Deployment Related Respiratory Disease Workup (Intermediate)
- WRIISC-HOME: A Step-by-Step Guide for Working with Veterans with Airborne Hazards and Respiratory Concerns: The Deployment-Related Respiratory Disease Toolkit (VA)
- WRIISC-HOME: The AHOBPR at 10 Years: Looking Back, Looking Forward (Introductory) (VA)
- WRIISC-HOME: Chronic Cough Evaluation and Care in Veterans with Military Exposure Concerns (VA)


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Photo by Master Sgt. Michel Sauret

Clinical Reports and Further Reading

Download or explore the following resources to learn more about open burn pits, exposures, and airborne hazards, as well as the Airborne Hazards and Open Burn Pit Registry.

Reports on Clinical Concerns Related to Airborne Hazard Exposures:

- Clinical Evaluation of Deployed Military Personnel with Chronic Respiratory Symptoms: Study of Active Duty Military for Pulmonary Disease Related to Environmental Deployment Exposures (STAMPEDE III) (Chest, June 2020)
- Study of Active Duty Military Personnel for Environmental Deployment Exposures: Pre- and Post- Deployment Spirometry (STAMPEDE II) (Respiratory Care, May 2019)
- Histological Diagnoses of Military Personnel Undergoing Lung Biopsy After Deployment to Southwest Asia (Lung, August 2017)
- The Impact of Combat Deployment on Asthma Diagnosis and Severity (Journal of Asthma, May 2015)
- Study of Active Duty Military for Pulmonary Disease Related to Environmental Deployment Exposures (STAMPEDE) (American Journal
- of Respiratory and Critical Care Medicine, July 2014)
- Evaluation of Deployment Related Respiratory Symptoms (Federal Practitioner, March 2014)
- Diagnosis and Management of Chronic Lung Disease in Deployed Military Personnel (Therapeutic Advances in Respiratory Disease, August 2013)
- Occupational Causes of Constrictive Bronchiolitis (Current Opinion in Allergy and Clinical Immunology, April 2013)
- Risk Communication in Deployment-Related Exposure Concerns (Journal of Occupational and Environmental Medicine, August 2012)
- Overview and Recommendations for Medical Screening and Diagnostic Evaluation for Post Deployment Lung Disease in Returning U.S. Warfighters (Journal of Occupational and Environmental Medicine, June 2012)
- Constrictive Bronchiolitis in Soldiers Returning from Iraq and Afghanistan (New England Journal of Medicine, July 2011)
- New-onset Asthma Among Soldiers Serving in Iraq and Afghanistan (Allergy & Asthma Proceedings, September 2010)
- Newly Reported Respiratory Symptoms and Conditions Among Military Personnel Deployed to Iraq and Afghanistan: A Prospective Population-Based Study (American Journal of Epidemiology, December 2009)
- Acute Eosinophilic Pneumonia Among US Military Personnel Deployed in or near Iraq (Journal of the American Medical Association, December 2004)

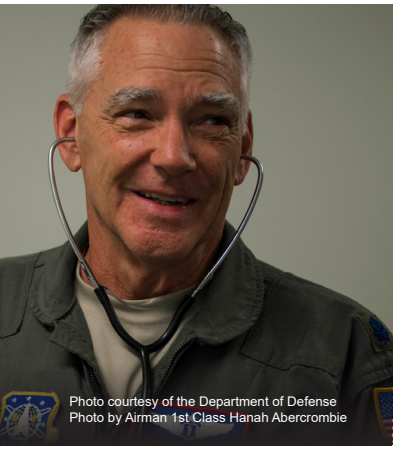
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Photo by Airman 1st Class Hanah Abercrombie

Screening for Exposures Through Health Assessments

DoD has added questions related to airborne hazards and open burn pit exposures to the periodic, separation, and deployment related health assessment forms.

If you conduct these assessments, please encourage eligible service members to maintain their enrollment in the registry at https://veteran.mobilehealth.va.gov/AHBurnPitRegistry or to visit http://health.mil/AHBurnPitRegistry for more information. Their participation supports ongoing VA research and informs future decisions around airborne hazards to keep service members and veterans healthy and safe.