2023 AMSUS Annual Meeting

“Healthcare Collaboration:
Meeting the Challenges of Today and Tomorrow”

13-16 February Gaylord National Resort Convention Center

Impact of Military Environmental Exposures on Respiratory Health

February 14, 2023

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Disclosure

- **Eric Garshick, MD, MOH**
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  - Professor of Medicine, Harvard Medical School
- Receives current grant support from:
  - Study Chair, CSP#595 - Service and Health Among Deployed Veterans (SHADE) study
  - Principal Investigator, I01 BX004619, VA Merit Review
- No relevant financial or non-financial interests to disclose
- The contents of this presentation do not represent the views of the VA or the United States Government

Disclosure

- **Michael Falvo, PhD**
  - Co-Director, VA Airborne Hazards and Burn Pits Center of Excellence
  - Research Scientist, VA New Jersey Health Care System
  - Associate Professor, Rutgers New Jersey Medical School
- Receives current grant support from:
  - Principal Investigator (PI), VA ORD I01 CX001329
  - Co-PI, VA ORD I01 CX001329
  - Co-Investigator (Co-I), VA ORD I01 BX004740
  - Co-I, DoD CDMRP W81XWH-19-2-0059
- No relevant financial or non-financial interests to disclose
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Learning Outcomes

At the conclusion of this activity, participants will be able to:

1. *Identify key military environmental exposures of concern and modes of assessment*

2. *Describe new findings about VA research on military exposures and respiratory health*

3. *Define new strategies to manage the care of Veterans with deployment-related exposures.*

How To Claim CE/CME Credit for this meeting

If you registered to receive continuing education credit for this activity, please visit the following link to complete the post-course evaluations:

amsus.cds.pesgce.com

Respiratory Health after Military Service in Southwest Asia and Afghanistan

Eric Garshick, MD, MOH

Lecture Overview

- 2 cases illustrating associations between deployment and pulmonary health
- Exposure overview: deployment as a paradigm of combined occupational and environmental exposures
- Known particulate matter ($PM_{2.5}$) respiratory health effects
- Respiratory health effects observed in deployers
  - Epidemiologic studies
  - Pathology and clinical case series
- Exposure assessment in CSP#595: Pulmonary Health and Deployment to Southwest Asia and Afghanistan
- Suggested clinical approaches

Patient 1 - 38 year old man - April 2011

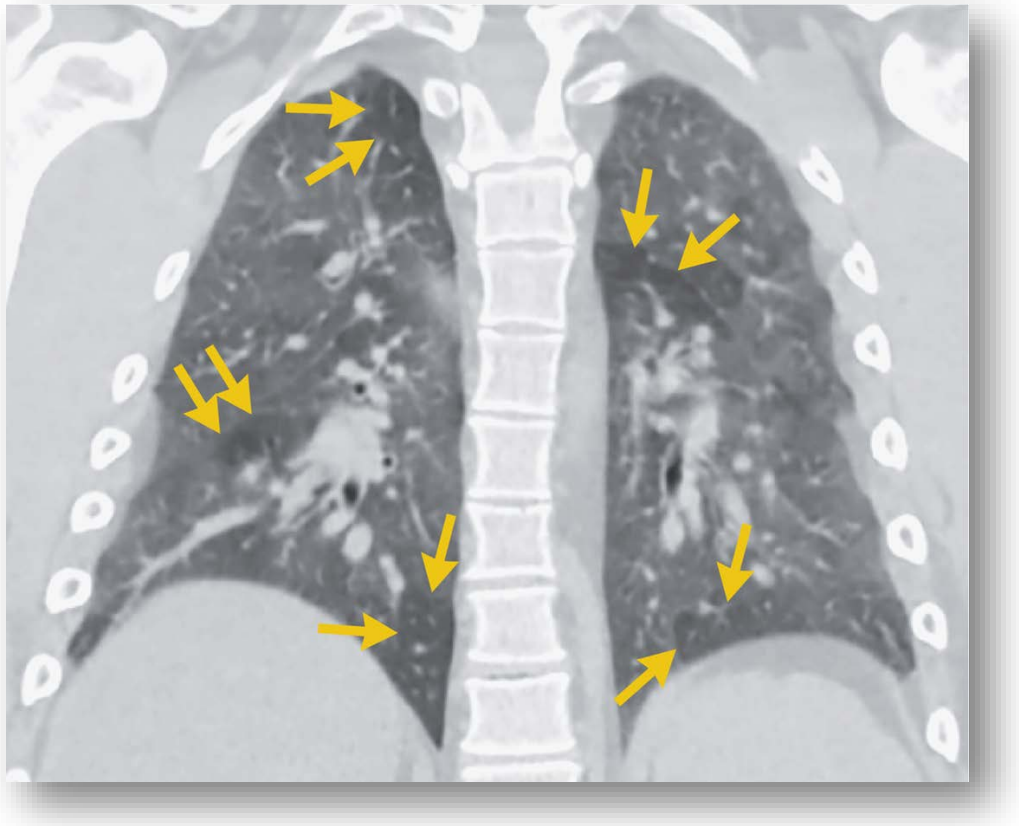
- Entered the Army in 1995; no past asthma or smoking
- 1999 – working in a local Armory developed rhinitis
- Deployed to Iraq 6/2006-9/2007
- Job was to retrieve burning vehicles after a battle
- In Iraq was treated 4 times for “bronchitis” and wheezing, once for “pneumonia” with antibiotics; received albuterol once.
- Discharged in 2009:
  - Every 3 to 4 months had increased cough, phlegm, dyspnea, +/- antibiotics
  - Exertional dyspnea and cough, particularly with cold air

- Exam: normal
- April 2011: FVC=4.95 L (95%); FEV_1=3.69 L (88%); ratio=0.75 (normal>0.71) no BD response
- CPETT: reproduced burning that he gets when feels "congested“, 10% drop in FEV_1
- June 2011: FVC=4.29 L (13%↓); FEV1=3.15 L (↓15%);
  - post BD FVC: 5.23 L (↑22%); FEV1: 4.18 L (↑33%)
- Allergy skin tests: multiple positive (dust, mold, etc.)
- Dx: asthma; started on inhaled steroids, allergy immunotherapy; LABA later added
- Symptoms improved, improved FVC and FEV_1

Patient 2 - 35 yo man N Eng J Med (2022)

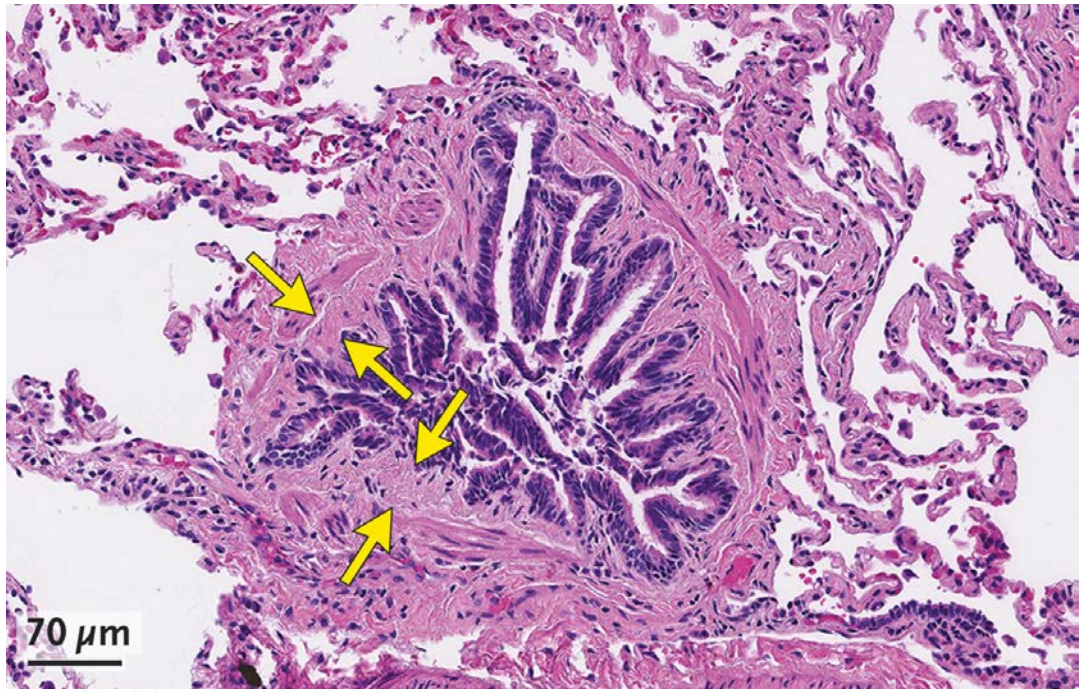
- 4 years of cough and dyspnea,
- Unable to pass police fitness test, gained 28 pounds due to decreased physical activity
- 1 PPD smoker, quit 3 years earlier, from age 16
- No asthma/seasonal allergies
- Deployed 2003-2005 in Iraq
- Delivered garbage to an open burn pit
- Burned human waste in large drums with jet fuel that with smoke causing cough and phlegm
- Exam: no wheeze, BMI=33

- PFT's: no obstruction, $FEV_{1,}$ FVC, TLC all ~60% predict
- Negative methacholine test
- Exercise test: stopped due to dyspnea, VO2 max 33% predicted, reduced ventilatory reserve
- Expiratory CT scan: gas trapping (suggests small airway disease)



AS Rabin et al. N Engl J Med 2022;386:1352-1357.

- VATS lung biopsy: constrictive bronchiolitis characterized by subepithelial fibrosis that widens (arrows) the normally narrow space between the airway epithelium and smooth muscle



- Rx: LABA/LAMA; azithromycin 3/week; pulmonary rehabilitation; improved dyspnea over 2 years

Deployment: Combined Occupational and Environmental Exposures

- "Ground" dust
  - Conveys and military operation
  - Dust storms
- Burn pits
- Engine exhaust
  - Trucks, tanks, aircraft, generators
- Other open combustion
  - Burning vehicles, combat related
- Job-related vapors, dust, gas, fumes (VDGF)
  - Vehicle and aircraft maintenance, refueling, construction

Desert Sand and Dust

- Afghanistan, Iraq, Kuwait include desert regions
- Dust storms 50-100 days/yr in Iraq, spring/summer
- Sand carries fungal spores, plant/grass pollens

Al Asad Airbase, Iraq, April 2005

Camp Bastion, Afghanistan, 2014

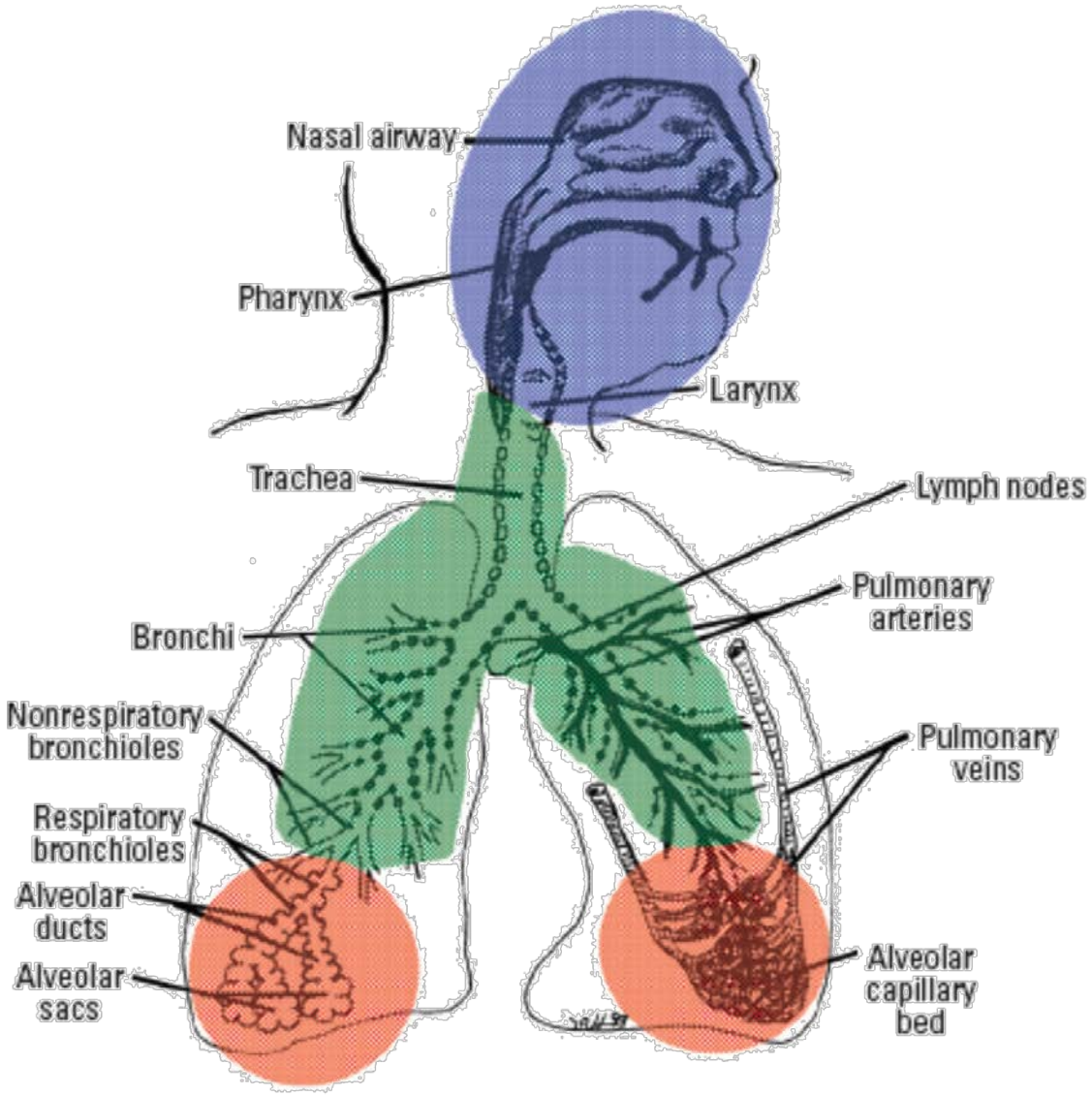
http://www.coasttocoastam.com/photo/view/sand_dust_storm_at_iraq_airbase/46040/

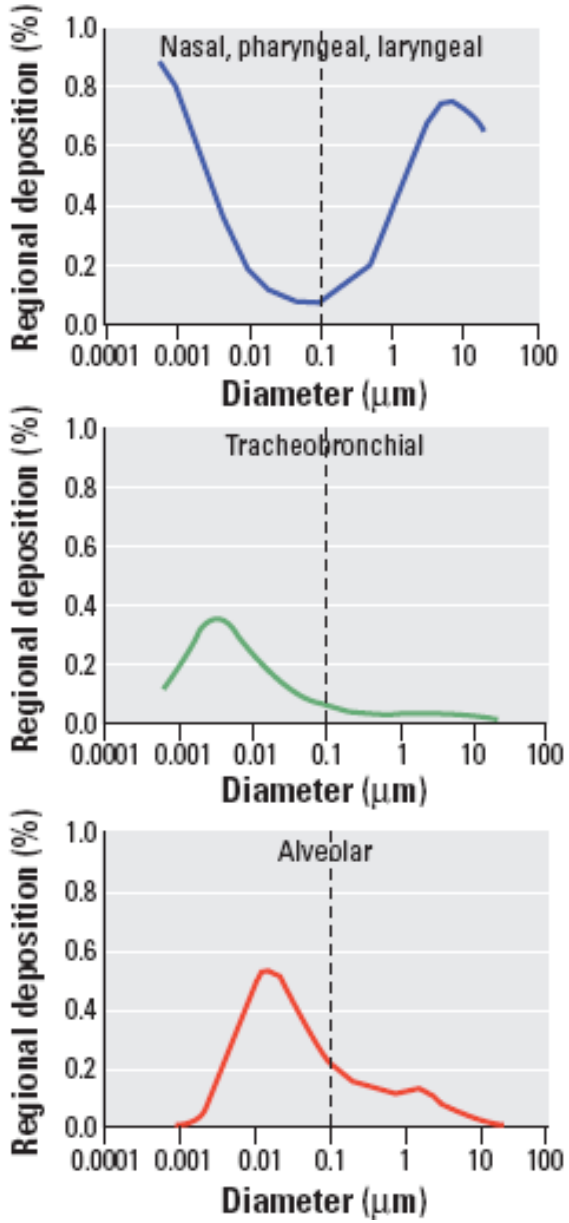
Burn Pit Operations

- Open-air waste burning to manage solid-waste
- At large bases ran continually - visible smoke
- Phased out ~2010 in Iraq, 197 in Afghanistan in 2011

Army Times 2008 and 2009; http://www.blogs.va.gov/VAntage/16192/ten-things-veterans-should-know-about-burn-pits

Size Determines Where Particles Deposit





Oberdoster et al. 2005

Long-Term Health Consequences of Exposure to Burn Pits in Iraq and Afghanistan, IOM Report 2011*

- Joint Base Balad (pop>25,000) - largest burn pit
- DoD sampled at burn pit and base perimeter in 2007 to assess contribution of pit to local pollution
- No difference in $PM_{2.5}$ levels
- "Air-monitoring data suggest that pollutants of greatest concern at JBB is mixture of *chemicals from regional background and local sources*—other than the burn pit—that contribute to high PM"

*Institute of Medicine (IOM) : established in by the National Academy of Sciences to review health related questions, serve as Federal advisor

Chronic exposure to air pollution : ↓pulmonary function; ↑emphysema

Doiron et al. Eu J Respir Dis (2019); UK Biobank

- n=303,887 age 40-69 in 2006-2010 with spirometry
- Modeled $PM_{2.5}$ estimates linked to home address
- 5 µg/m^3 ↑$PM_{2.5}$: ↓FEV_1 (-83.1 ml; 95%CI -92.5-73.8); ↓FVC and ↓FEV_1/FVC
- COPD (FEV_1/FVC<LLN) in 7% of population; OR=1.52 (95%:1.42-1.62)

Wang et al. JAMA (2019)

- n=5780 in 6 US communities; longitudinal CT scans >10 years
- Ambient $PM_{2.5}$, NOx, and black carbon at baseline significantly associated with ↑ %-emphysema

Occupational exposures to VDGF: ↓pulmonary function; ↑emphysema

Lytras et al. Thorax (2018); European Community Respiratory Health Survey (ECRHS)

- General population; n=3,343 aged 20-44 assessed 1991-1993, and up to 20 years later (2010-2012), post BD spirometry. Asthma/COPD at entry excluded
- JEM assessment of exposure between visits
- COPD defined FEV_1/FVC below lower limit of normal
- Biological dust: RR=1.6; Gases and fumes: RR=1.5; pesticides RR=2.2

Paulin et al. Ann Am Thor Soc (2018); Marchetti et al . Am J Res Crit Care Med (2014)

- 2 cohorts of current/former smokers (n=2,736 and 9,614)
- Increase in %-emphysema with self-reported VDGF exposure

Asthma and Air Pollution

- Strong evidence in children for new onset asthma with traffic-related pollutants
  - Southern CA Children's Health Study
- Weaker evidence in adults
- Mechanistic studies demonstrate associations between air pollution components with allergic sensitization, oxidative stress, airway remodeling

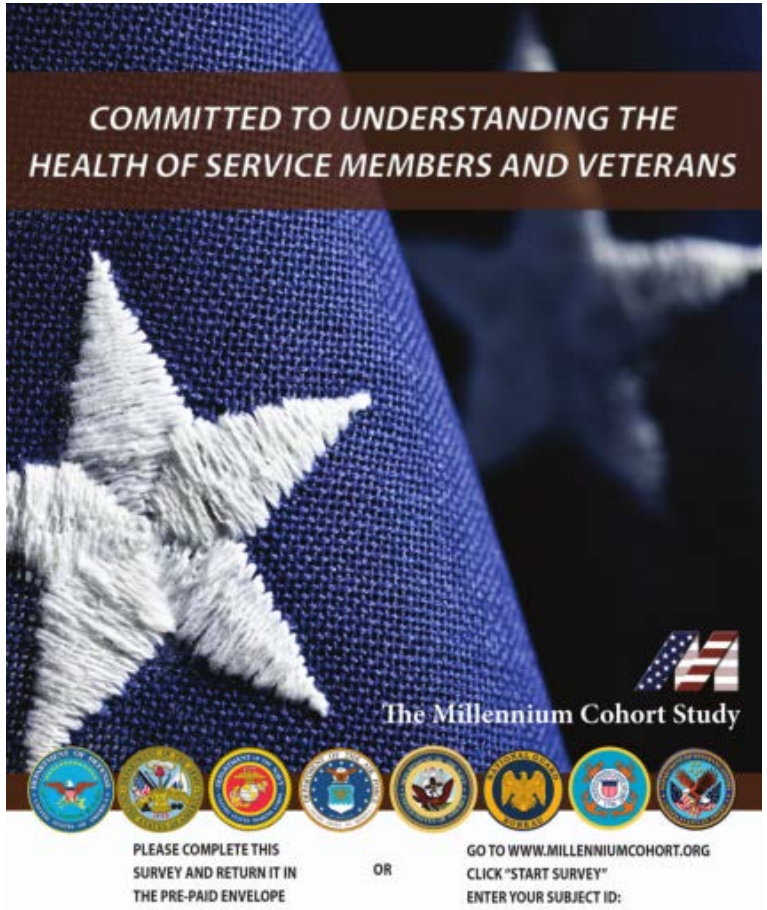
Reference: Outdoor Air Pollution and New-Onset Airway Disease; ATS Workshop Report Ann ATS 2020

Army Public Health Command Studies

- Asthma/COPD encounters in pre-2006 deployers increased post deployment RR=1.25 (CI: 1.13, 1.39)
  - Abraham JH et al J Occup Environ Med (2012)
- Compared to US based troops, deployed troops 2005-2007 had more respiratory symptom and asthma encounters over 4-years, RR=1.25 (CI: 1.20, 1.30) and 1.54 (CI: 1.33, 1.78)
  - Abraham JH et al. Mil Med (2014)
- Compared to US based troops, persons deployed pre-2006 to Kabul and followed though 2011 had more respiratory symptom and asthma encounters ; RR=1.12 (CI: 1.05-1.19) and 1.61 (CI:1.22-2.12)
  - Sharkey JM et al Mil Med (2016)

Millennium Cohort Study

- Largest and longest running cohort study in military history
  - Initiated July 2001 (pre-9/11), N ~ 240,000
- Representative sample of all services
- 7/2001-6/2003: during the last 12 months, have you had persistent or recurring problems with cough, shortness of breath
- 6/2004-2/2006 : same questions, in past 3 months
- Through 2013: "In the last 3 years, has your doctor or other health care professional told you that you have asthma?"

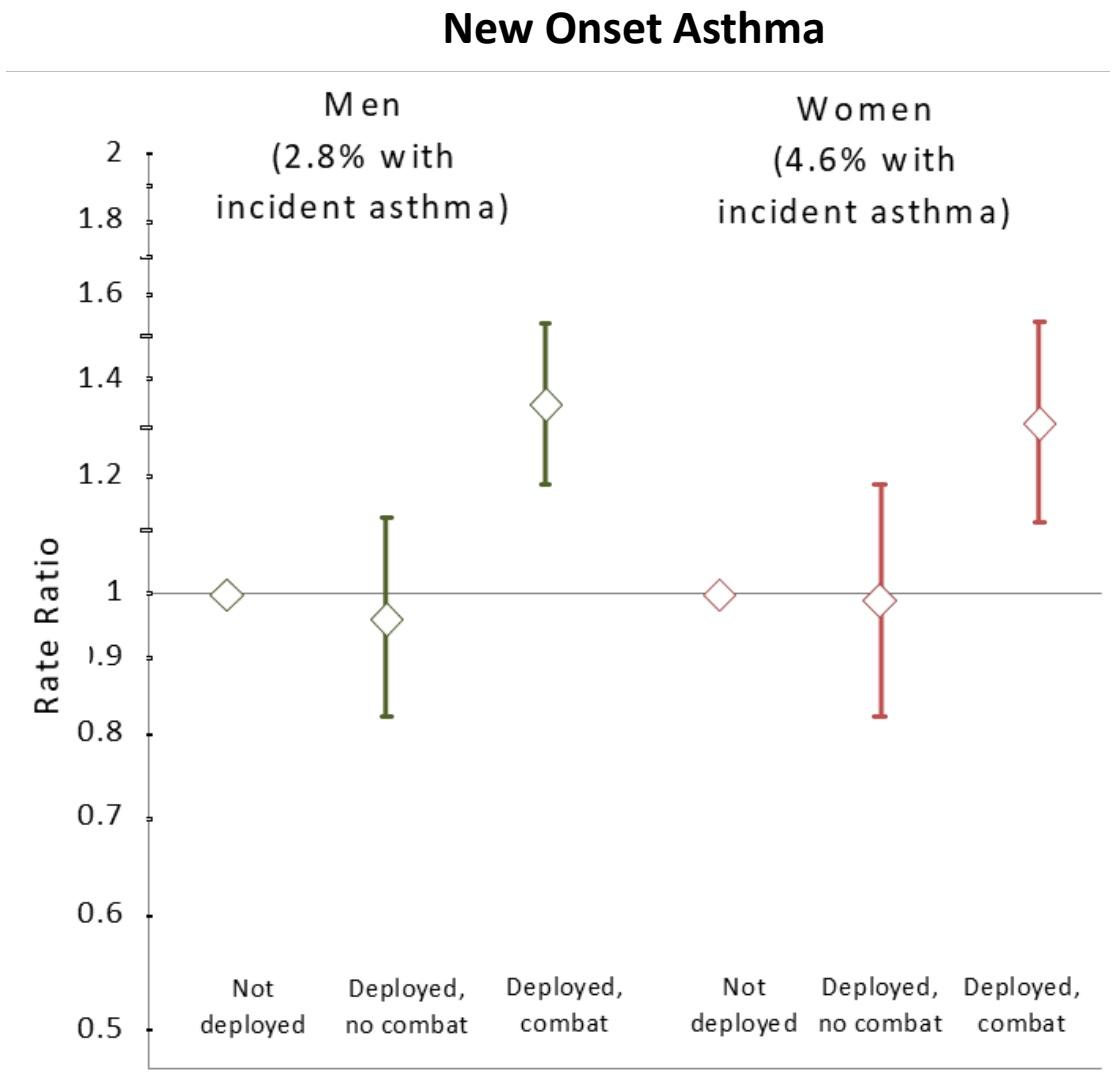


Enrollment panels: 2001, 2004, 2007, 2011, 2020	Surveys completed every 3-5 years, even after leaving military service, through 2068

Post-Deployment Respiratory Outcomes

Adjusted Odds Ratios , Deployers vs. Non-Deployers, 2001-2006	
Service Branch (n)	New-Onset Cough or Shortness of Breath
Army (18,045)	1.73 (1.57, 1.91)
Marine Corps (1,679)	1.49 (1.06, 2.08)
Navy/Coast Guard (7,240)	1.06 (0.86, 1.32)
Air Force (12,029)	1.09 (0.95, 1.26)

Smith et al. Am J Epidemio (2009)



Rivera et al. Am J Epidemiol (2018)

Constrictive Bronchiolitis

- First described by King et al. Constrictive bronchiolitis in soldiers returning from Iraq and Afghanistan. N Eng J Med (2011)
  - 49 soldiers with unexplained dypsnea underwent lung biopsy
  - 38 had bronchiolar wall thickening with muscle/fibrous tissue
  - 34% normal PFT's; 50% reduced diffusion; low normal exercise capacity; 6 soldiers mild air trapping on CT scan
- Gutor et al Am J Pathol (2021)
  - Review of 50 cases of CB, including 22 from King et al
  - Noted additional abnormalities: vascular smooth muscle hypertrophy, pleural inflammation/fibrosis, airway lymphocytic infiltration
  - Suggested that CB post deployment was milder and different than CB in other settings: chronic lung transplant rejection, autoimmune CT diseases, mustard gas, food-flavoring workers

Clinical Case Series

- National Jewish Health, N=127
  - Asthma (31.5%); inducible laryngeal obstruction (14.2%); rhinosinusitis (15%)
  - 52 biopsies: bronchiolitis (60%); granulomatous pneumonitis/lymphocytic inflammation (50%); pleuritis (35%); vascular abnormalities (14%)
- Brooke Army Medical Center
  - N=50, 40% asthma/bronchial hyperresponsiveness
  - N=310, 23% asthma, 11% bronchial hyperresponsiveness , 6% GE reflux, 5% upper airway disorders

Ref: Garshick et al Ann Am Thor Soc (2019); Krefft et al JOEM (2020)

VA Cooperative Study #595 Pulmonary Health and Deployment to Southwest Asia and Afghanistan

Co-Chairs: Eric Garshick,
Paul D. Blanc

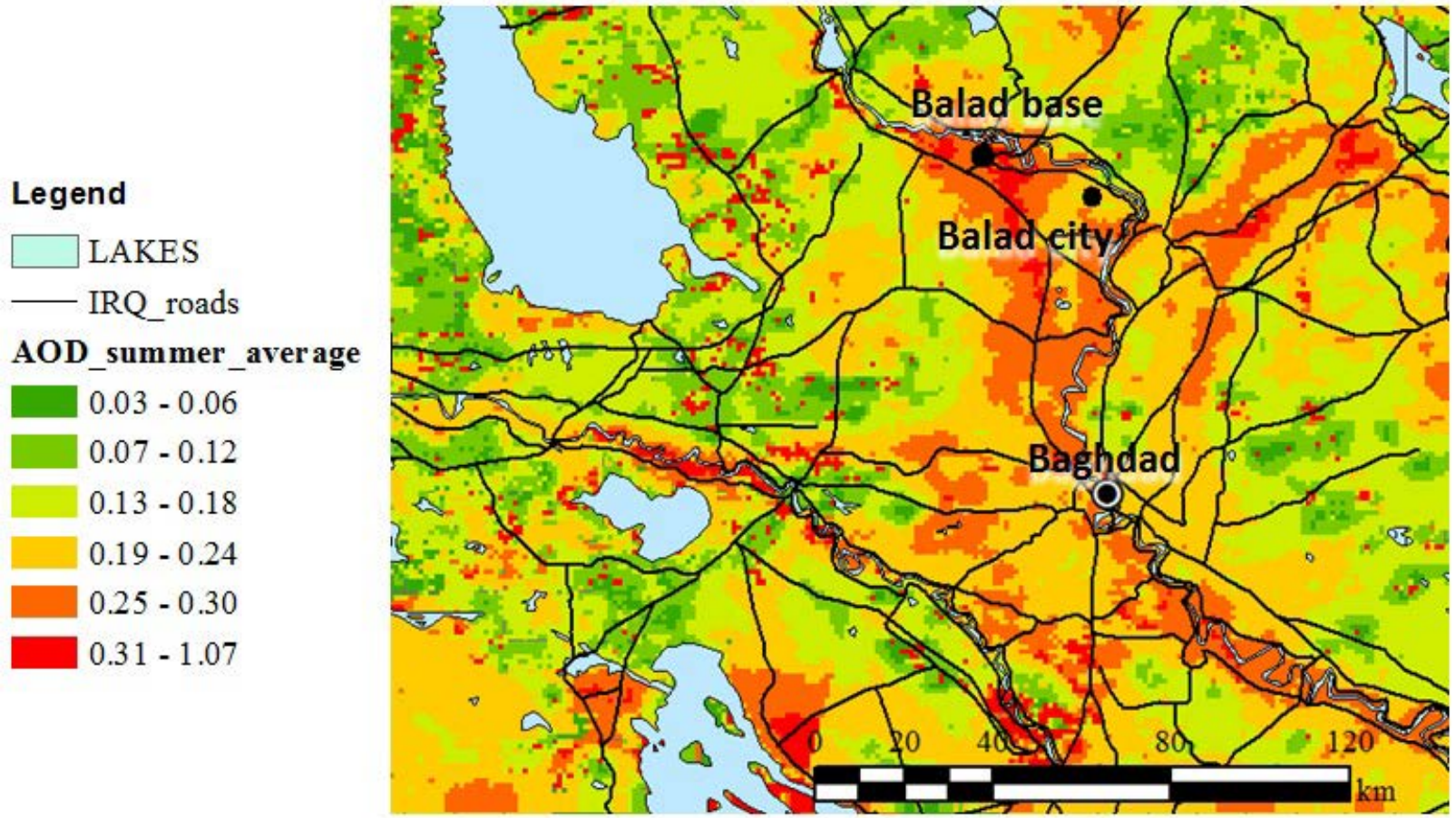
- Exposure: (a) $PM_{2.5}$ during deployment location. (b) military occupational and source-specific environmental exposures by questionnaire
- Outcomes: Pulmonary function assessed by spirometry; symptoms; healthcare-provider diagnosed asthma; target sample size: ~5,000 at 6 VA sites

Aerosol Optical Depth (AOD) ~ ambient $PM_{2.5}$

NASA Satellites

- Particles in the atmosphere (dust, smoke, pollution) block sunlight by absorbing or by scattering light
- AOD tells us how much direct sunlight is prevented from reaching the ground by these aerosol particles
- Satellite retrieval algorithms extract particle reflectance from total reflectance (particle + surface)

Average AOD values in vicinity of Balad and Baghdad using high resolution 1 km^2 data, summer 2006



$PM_{2.5}$ Calculations

- NASA Terra and Aqua, two Earth Observing System (EOS) satellites provides AOD data in 1x1 km grids
- Match ground airport visibility monitoring stations with AOD grid cell; convert AOD to ground airport visibility
- Convert visibility to $PM_{2.5}$ collected in region; link to geocoded bases
    - Kuwait: 2004-2005, 2017-2018
- Information is summed to produce cumulative $PM_{2.5}$ exposure over all deployments (deployment history obtained by interview)

Reference: Li J, Garshick E, Hart JE, et al. Estimation of ambient PM2.5 in Iraq and Kuwait from 2001 to 2018 using machine learning and remote sensing. Environ Int. (2021)

32-item Exposure Questionnaire

- The next questions ask about “heavy” levels of exposure. Heavy means a sustained or direct exposure in close proximity – exposure that you could clearly sense at the time, for example, through effects on the eyes, throat, or breathing.

- Over all your deployments, for how many months did this exposure occur? In a typical month on approximately how many days did this occur?

- Burn pit smoke (4 items)
- Combustion engine exhaust (5 items)
- Ground dust/dust storms (5 items)
- Other open combustion sources (4 items; combat-related)
- Insecticides/other toxicants (3 items)
- Job-related vapors, gas, dust, and fumes (VGDF; 11 items)

Burn Pits (4-items)

1a. Heavy exposure to smoke or fumes from personally operating or working with trash incineration or at a burn pit? This includes regularly burning trash and burn pit security.
2a. Heavy sustained exposure outdoors to smoke or fumes from burn pits or planned incineration, for example, when the wind changed or there was other heavy exposure?
3a. Heavy sustained exposure to smoke or fumes from burn pits or planned incineration coming into your work site or housing?
16a. Doing regular exercise or other physical exertion alongside of the perimeter or right beside a burn pit site?

Chronic bronchitis: Cough and phlegm on most days for 3 consecutive months of the year; 89% with ≥2 years

Wheeze: In the last 12 months, have you had wheezing or whistling in your chest at any time?

Multivariable Models:	Chronic Bronchitis Odds Ratio (95%CI)		Wheeze Odds Ratio (95%CI)	
Burn Pit	1.22	(1.13, 1.44)	1.04	(0.96, 1.11)
Job-related VGDF	1.14	(0.95, 1.54)	1.18	(1.02, 1.35)

Each exposure standardized to a 0 -100 exposure score, expressed per 20 unit change in score. Adjusted for smoking, BMI, sex, race, age

Am J Respir Crit Care Med 2022;205:A3843

Patient Assessment

History

- Deployment location and duration
- Military occupation/job duties
- Exposures: Burn pit, dust storm/ground dust, engine exhaust, other combustion sources, job-related VDGF
- Allergy, asthma history and current symptoms
- Smoking
- Civilian occupational history, hobbies

Clinical Tests

- PFTS: volumes, diffusion, spirometry pre/post BD
- Inspiratory/expiratory CT imaging
- Other: Upper airway exam (vocal cord), cardiopulmonary exercise test, allergy testing, methacholine test
- Need/role for lung biopsy uncertain
- Other tools:
  - Computer analysis of I/E CT to quantify small airway disease
  - Oscillometry: measures resistance during tidal breathing
- Focus of VA Merit Review at 4 CSP#595 sites
  - 320 persons with/without symptoms, never smokers will receive I/E CT scans, oscillometry, blood for inflammatory markers, immune function

VA's Approach to Airborne Hazards and Respiratory Health

Michael Falvo, PhD

Overview

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CENTER OF EXCELLENCE

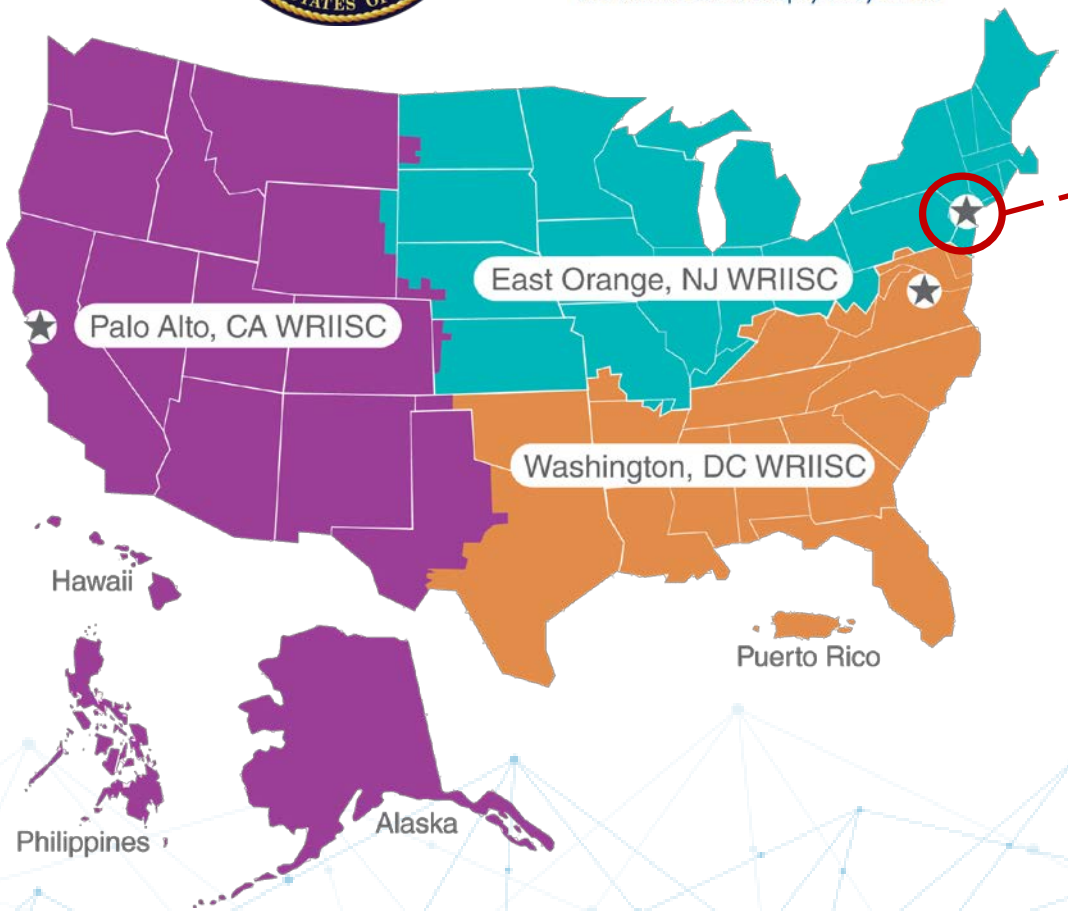
VA Health
Airborne Hazards and Open Burn Pit Registry

POST DEPLOYMENT CARDIOPULMONARY EVALUATION NETWORK

DEPLOYMENT RELATED RESPIRATORY DISEASE

PACT Act

WRIISC
War Related Illness & Injury Study Center



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CENTER OF EXCELLENCE

VA Center of Excellence (Public Law 115-929)
Established in 2019

AIRBORNE HAZARDS AND BURN PITS CENTER OF EXCELLENCE

Airborne Hazards and Open Burn Pit Registry

Clinical Care | **Registry** | **PDCEN** | **Research** | **Education**

Airborne Hazards and Open Burn Pit Registry

**Deployed to Southwest Asia after 8/2/90 or Afghanistan or Djibouti after 9/11/01*

- **>349,000** participants (12/8/2022)
- Open to active duty servicemembers and Veterans*
- 2 parts:
  1. Self-assessment questionnaire (SAQ)
  2. **Optional health evaluation†**

†Not required to be enrolled in VHA health care

https://www.publichealth.va.gov/exposures/burnpits/index.asp

U.S. Department of Veterans Affairs

Get help from Veterans Crisis Line

DS Logon Sign in »

Home: About the Registry | About Airborne Hazard Exposures | How to Get Care | Frequently Asked Questions | Help

Airborne Hazards and Open Burn Pit Registry

VA established this registry in 2014 to put data to work for Veterans and help us better understand the potential health effects of exposure to airborne hazards during military service. By joining the registry, you can provide information that will help VA provide better care to all Veterans.

To learn more about airborne hazards or how to receive care from VA, visit VA's public health site.

Is this for me?

You are eligible to participate if you served in Operations Desert Storm/Desert Shield (ODS), New Dawn (OND), or Iraqi Freedom/Enduring Freedom (OIF/OEF) *.

We encourage you to join even if:

- You don't think you were exposed to specific airborne hazards.
- You are not experiencing symptoms or illnesses you think are related to your exposures.
- You have not filed a VA claim for compensation and benefits or applied for VA health care **.
- You are still an active-duty service member or have returned to active service.

** Includes deployment to countries in the Southwest Asia theater of operations any time after August 2, 1990 or Afghanistan or Djibouti after September 11, 2001*

What does the registry involve?

The registry includes an online questionnaire and an optional health evaluation.

Part I: Health Questionnaire

- The questionnaire can take up to an hour to complete depending on your number of deployments.
- You can save your progress and come back to complete the questionnaire later if needed.
- Questions include information about your deployments, health history, lifestyle, and other factors.

Part II: Health Evaluation

- The optional evaluation will be performed by a VA or military health provider.

Registry Help Desk

Call: 1-877-470-5947

Hours: 8:00 am – 8:00 pm EST

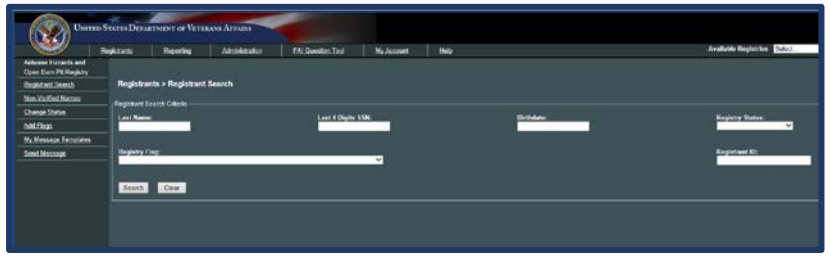
How do I get started?

Follow the steps below to get started. If you need technical assistance, visit the help page. You can also refer to this handy reference sheet.

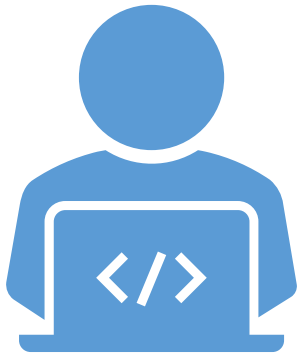
1. Use your **Premium DS Logon Level 2*** account to log in, check your eligibility, and complete the online questionnaire.
2. Save or print your questionnaire responses for your records. You can also come back to access your responses at any time.
3. Contact your local environmental health coordinator to schedule your optional medical evaluation at your convenience**.

** If you need a DS Logon account, click here.*

*** If you are active-duty service member, visit the military health website for information about scheduling your registry exam.*

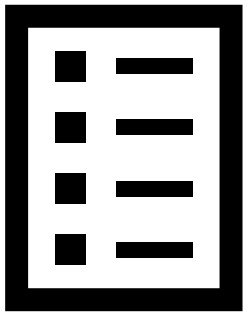


Challenges and Opportunities



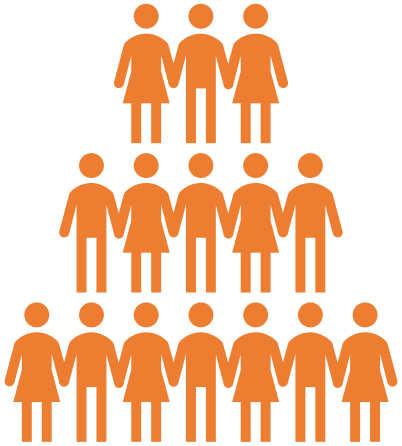
Self-Reported Exposures

Enhanced Exposure Metrics



Survey Questions

Merging with Health Records



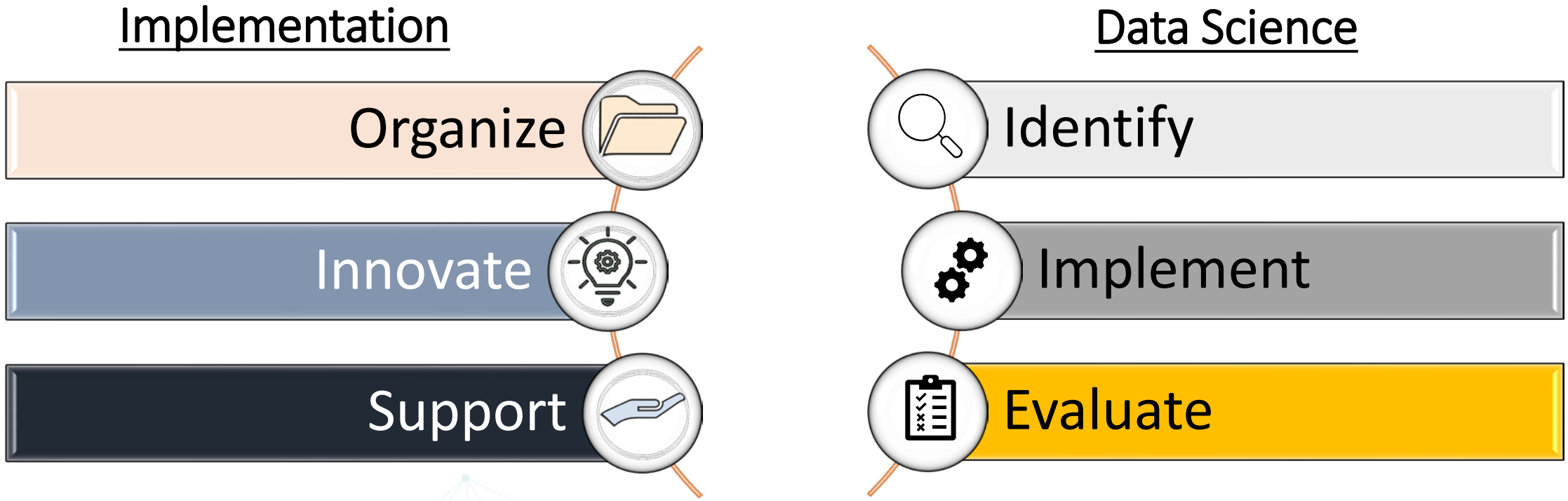
Participation Rate

Case-Control Studies

AIMES collaboration website:
https://www.warrelatedillness.va.gov/WARRELATEDILLNESS/AHBPCE/aimes.asp

AIMES collaborative email:
aimescollab@va.gov

AHBPCE IQuESt Military Exposure Surveillance (AIMES) Collaboration



VA U.S. Department of Veterans Affairs
Veterans Health Administration
Michael E. DeBakey VA Medical Center

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CENTER FOR INNOVATIONS IN QUALITY, EFFECTIVENESS & SAFETY

Baylor College of Medicine

BEST PRACTICES – Based on Interviews from High Performing Sites

ADMINISTRATIVE PERSONNEL STRUCTURE

Key to success is having strong, supported administrative personnel who can effectively coordinate a facility's AHBOPR program.

Most sites have a single Medical Support Assistant (MSA) or Environmental Health Coordinator (EHC) overseeing and conducting administrative tasks.

UNIVERSAL ADMINISTRATIVE RESPONSIBILITIES

- ☑ Navigate, track, and pull data from The Veterans Integrated Registries Platform (VIRP)
- ☑ In VIRP, identify Veterans who requested an exam and use priority flags (e.g., declined exam, no show, unable to contact, or deceased.
- ☑ Contact Veterans by telephone to schedule
- ☑ Update Veteran information and status (i.e., moved, current interest, contact info, etc.)
- ☑ Track contacts and results for your facility in VIRP and locally

KEY FACILITATORS

- **Communication is key:** Leadership support and communication between administrators and clinicians is essential.
- **"Money speaks":** Administrators and clinicians need to be paid for their time.
  - Resources should be readily available to support exams.
- **Changing hearts and minds:** Rather than an "Administrative Service," AHOBPR exams are care only the VA can provide and a gateway for younger veterans to enroll in the VA. When conducted appropriately, AHOBPR exams can be a mechanism for satisfaction and retention within VA health care.

CLINICAL PERSONNEL STRUCTURE

Most sites have a "Clinical Champion"—a dedicated clinician who conducts the exams and has expertise in exposure concerns. Some sites use cross-trained clinicians or fee-based physicians, as necessary.

Toolkit

PRESENTATIONS

PROCESS MAPS

BEST PRACTICES

GUIDES AND HANDOUTS

COMMUNICATION TEMPLATES

NATIONAL STRATEGIC PLAN AND CONGRESS DIRECTIVE

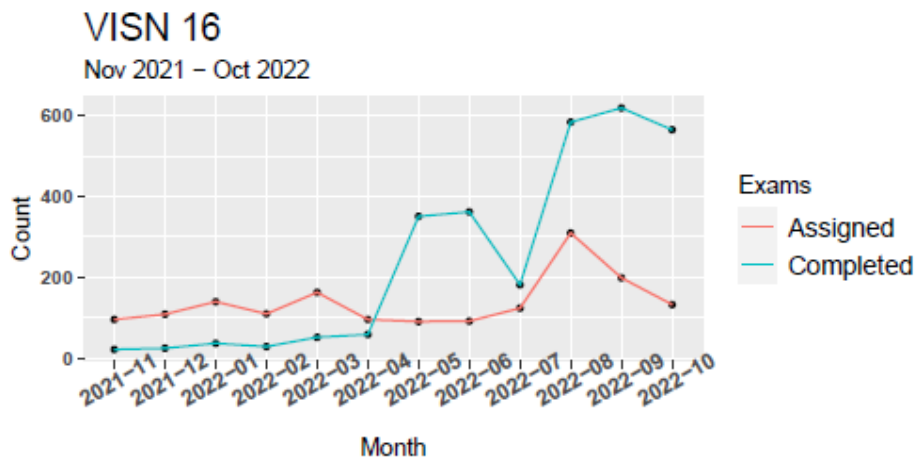
National VHA Metrics

Period	Total Number Partici-pants	Requested Exams Assigned	Exclusions	Requested Exams Completed	Completion Percent	Pending Exams	Total Exams Completed	Completion Ratio
1 month	3,176	1,654	64	227	17.6	1,363	5,407	3.31
3 month	15,255	7,961	716	2,332	38.3	4,913	16,620	2.18
6 month	23,640	12,231	1,277	4,288	45.5	6,666	25,821	2.22
Total	270,340	147,788	16,791	45,227	42.0	85,770	57,011	0.50

VISN 16 Metrics

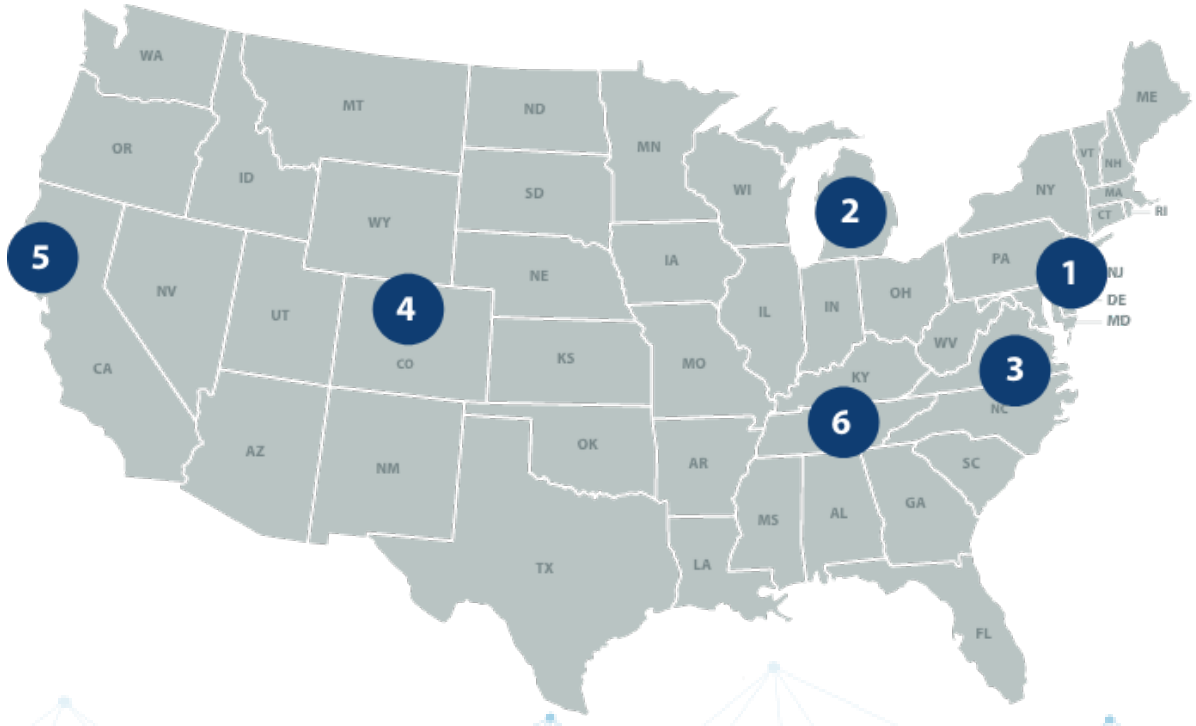
Period	Participants Assigned	Requested Exams Assigned	Exclusions	Requested Exams Completed	Completion Percent	Pending Exams	Total Exams Completed	Completion Ratio
1 month	255	133	4	27	23.3	102	565	4.28
3 month	1,206	642	57	230	44.7	355	1,768	2.84
6 month	1,808	949	106	379	51.1	464	2,663	2.92
Total	16,501	9,062	852	2,786	40.1	5,424	3,247	0.45

Monthly trends in number of exams assigned and completed



AIRBORNE HAZARDS AND BURN PITS
CENTER OF EXCELLENCE

POST DEPLOYMENT CARDIOPULMONARY EVALUATION NETWORK



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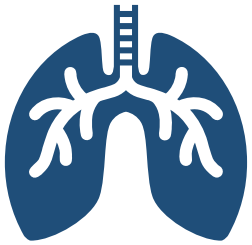
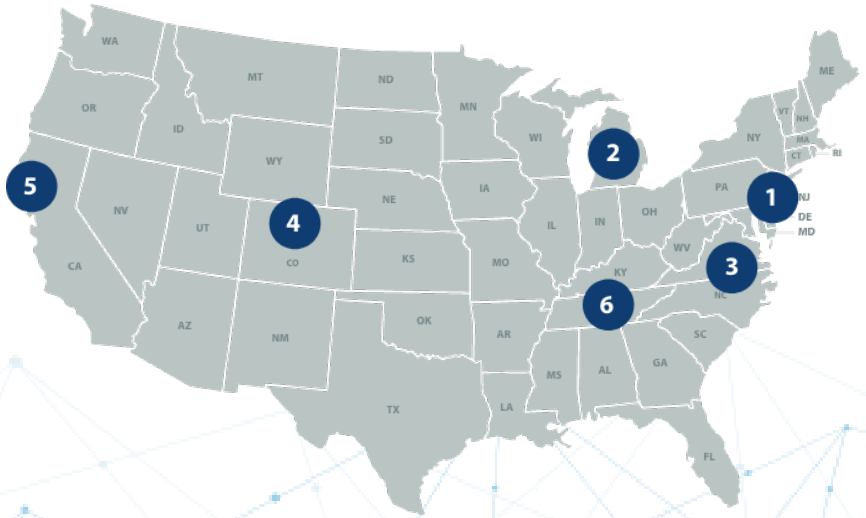
Airborne Hazards and Open Burn Pit Registry



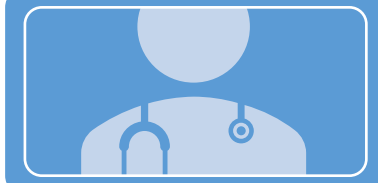
Self-reported respiratory condition(s)



PDCEN Core Clinical Evaluation

https://pubmed.ncbi.nlm.nih.gov/36425809/

PDCEN Core Clinical Evaluation



Clinical Evaluation by VA providers

- Specialty-led evaluation (pulmonary, occupational/environmental)
- Multi-disciplinary providers

Cardiopulmonary Evaluation

- Comprehensive PFTs, forced oscillometry and bronchoprovocation
- Cardiopulmonary exercise testing

Health and Exposure Questionnaire

- REDCap questionnaires
- Collaborating with **CSP#595 SHADE Study** – exposure evaluation

High-Resolution CT Imaging

- Paired inspiratory/expiratory scans
- Parametric response mapping

Extrapulmonary Evaluation

- Upper Airway (CT sinus and ENT evaluation)
- Echocardiography, polysomnography, lab work

Consensus Panel

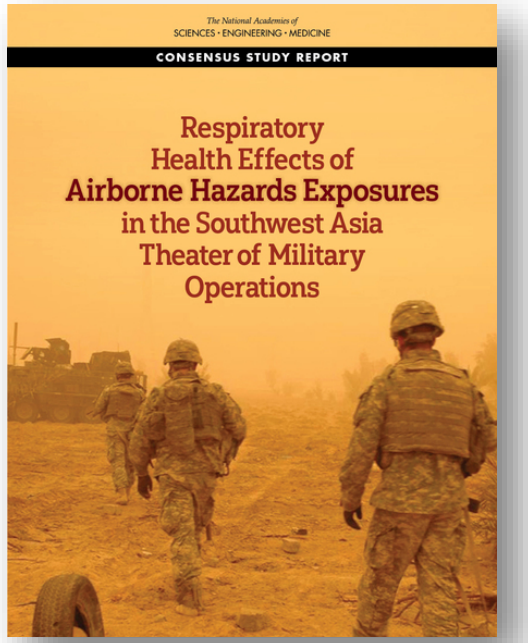
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Constrictive Bronchiolitis in Soldiers Returning from Iraq and Afghanistan

Matthew S. King, M.D., Rosana Eisenberg, M.D., John H. Newman, M.D., James J. Tolle, M.D., Frank E. Harrell, Jr., Ph.D., Hui Nian, Ph.D., Mathew Ninan, M.D., Eric S. Lambright, M.D., James R. Sheller, M.D., Joyce E. Johnson, M.D., and Robert F. Miller, M.D.

2011



2020

[Diffuse Lung Disease Guidelines and Consensus Statements]

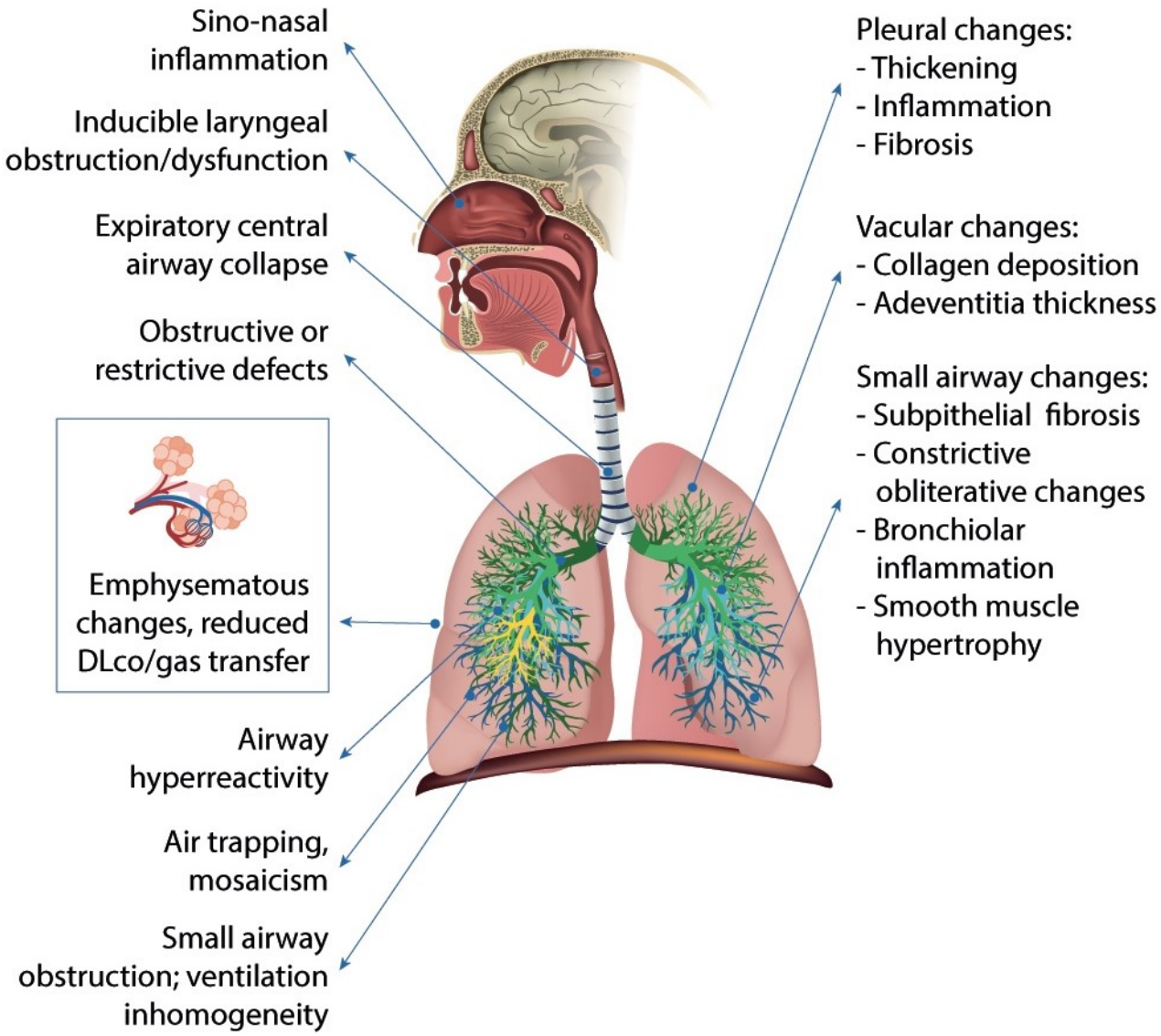
CHEST

Consensus Statements on Deployment-Related Respiratory Disease, Inclusive of Constrictive Bronchiolitis

A Modified Delphi Study

Michael J. Falvo, PhD; Anays M. Sotolongo, MD; John J. Osterholzer, MD; Michelle W. Robertson, MD; Ella A. Kazerooni, MD; Judith K. Amorosa, MD; Eric Garshick, MD; Kirk D. Jones, MD; Jeffrey R. Galvin, MD; Kathleen Kreiss, MD; Stella E. Hines, MD; Teri J. Franks, MD; Robert F. Miller, MD; Cecile S. Rose, MD; Mehrdad Arjomandi, MD; Silpa D. Krefft, MD; Michael J. Morris, MD; Vasiliy V. Polosukhin, MD; Paul D. Blanc, MD; and Jeanine M. D'Armiento, MD, PhD

2022



https://pubmed.ncbi.nlm.nih.gov/36343686/

Delphi Study

- 19 expert panelists
  - VA, DoD, academia
- Multiple components of the lung
- “Deployment-Related Respiratory Disease”
- Provider toolkit

What is the PACT Act?

Vietnam

Gulf War Era

Post-9/11 Afghanistan and Iraq

The Sergeant First Class Heath Robinson Promise to Address Comprehensive Toxics (PACT) Act of 2022

is a new law that expands VA health care and benefits for Veterans exposed to burn pits and other toxic substances. This law helps us provide generations of Veterans—and their survivors—with the care and benefits they've earned and deserve.

The PACT Act:

- Expands and extends eligibility for VA health care for Veterans with toxic exposures and Veterans of the Vietnam era, Gulf War era, and Post-9/11 era.
- Expands eligibility for benefits for Veterans exposed to toxic substances.

Slide courtesy of Dept of Veterans Affairs

PACT Act Key Components

The Act **expands and extends eligibility for VA health care for Veterans with toxic exposures** and Veterans of the Vietnam era, Gulf War era, and Post-9/11 era.

VA **will improve the decision-making process** for determining what medical conditions will be considered for presumptive status.

Every enrolled Veteran **will receive an initial toxic exposure screening** and a follow-up screening every five years. Veterans who are not enrolled, but who are eligible to enroll, will have an opportunity to enroll and receive the screening.

VA health care staff and claims processors will receive **toxic exposure-related education and training**.

The Act **requires research studies** on the mortality of Veterans who served in Southwest Asia during the Gulf War; Post-9/11 Veteran health trends; and Veteran cancer rates.

The Act will help VA **build a stronger, more skilled workforce** to meet the growing demand for benefits and services.

The Act **authorizes 31 new facilities** across the country, providing greater access to VA health care.

Slide courtesy of Dept of Veterans Affairs

Conditions Presumed to be Service-Connected

As of August 10, 2022, a long list of new conditions are presumed to be service-connected due to various in-service toxic exposures. **APPLY NOW** at VA.gov/PACT to expedite your claim and benefits.

- Asthma (diagnosed after service)
- Brain cancer
- Chronic bronchitis
- Chronic obstructive pulmonary disease (COPD)
- Chronic rhinitis
- Chronic sinusitis
- Constrictive bronchiolitis or obliterative bronchiolitis
- Emphysema
- Gastrointestinal cancer of any type
- Glioblastoma
- Granulomatous disease
- Head cancer of any type
- High blood pressure (hypertension)
- Interstitial lung disease (ILD)
- Kidney cancer
- Lymphomatic cancer of any type
- Lymphoma of any type
- Melanoma
- Monoclonal gammopathy of undetermined significance (MGUS)
- Neck cancer
- Pancreatic cancer
- Pleuritis
- Pulmonary fibrosis
- Reproductive cancer of any type
- Respiratory (breathing-related) cancer of any type
- Sarcoidosis

Health Care Enrollment Eligibility

Veterans who served in the following locations and time periods can enroll in VA health care NOW:

- **Republic of Vietnam** (between January 9, 1962 and May 7, 1975)
- **Thailand at any US or Royal Thai base** (between January 9, 1962 and June 30, 1976)
- **Laos** (between December 1, 1965 and September 30, 1969)
- **Certain Provinces in Cambodia** (between April 16, 1969, and April 30, 1969)
- **Guam or American Samoa or their territorial waters** (between January 9, 1962 and July 31, 1980)
- **Johnston Atoll, or a ship that called there** (between January 1, 1972 and September 30, 1977)

Vietnam-era Veterans are now able to apply for two new Agent Orange presumptive conditions:

- **Monoclonal gammopathy of undetermined significance (MGUS)**
- **Hypertension (high blood pressure)**

Special Enrollment Period – October 1, 2022 - October 1, 2023

for Post-9/11 combat Veterans who separated or discharged **between September 11, 2001 and October 1, 2013**. Enrollment is free, there are no annual costs, and care may be free as well!

Toxic Exposure Screening for Veterans

WHO: All Veterans enrolled in VA health care

WHAT: A quick (5-10 minute) series of questions to identify and document any potential exposures to toxins during military service

WHEN: At least one every 5 years

WHERE: VA medical centers and clinics

WHY: Supports Veteran long-term health plans and informed, whole-health care

HOW: Veterans can ask about the screening at their next VA appointment

A proud partnership between the Department of Veteran Affairs and American College of Preventive Medicine (ACPM)

https://www.acpm.org/Education-Events/Military-Environmental-Exposures-Certification

Level 1 Certification – Available Now
Level 2 Certification – Coming Soon

ACPM
American College of Preventive Medicine

VA | U.S. Department of Veterans Affairs
Veterans Health Administration
Patient Care Services

WRIISC
War Related Illness & Injury Study Center

Why should providers become certified in Military Environmental Exposures?

Over 1/3 of Veterans are concerned about military exposures
Veterans Expect VA Providers to know about military exposures
VA providers Need tools to respond to military exposure concerns.

New Required Military Exposure Training

FROM THE WRIISC-HOME E-LEARNING COLLECTION

A New Mandatory Education Training Requirement

VHA/VBA Compensation and Pension Providers & VHA Clinicians

MODULE 1: Assessing Deployment Related Environmental Exposures

90 Minutes = 1.50 CEUs TRAIN: ID: 1070234 TMS: ID: 33195

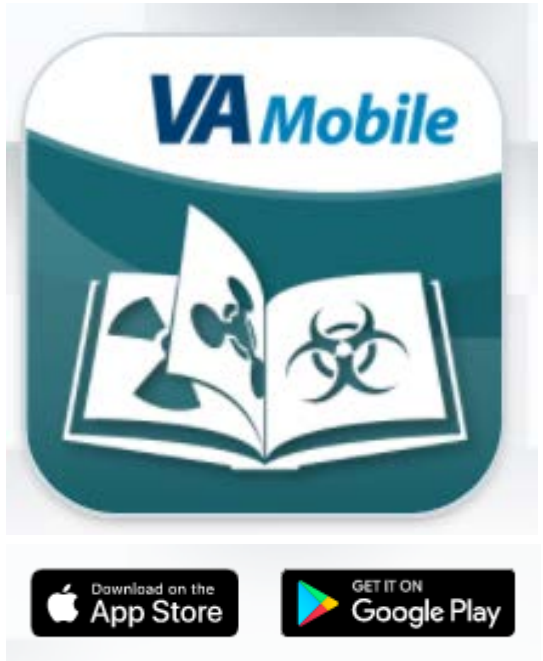
Intends to increase clinician knowledge and to inform learners about how to recognize the role and importance of deployment related exposure assessment, identify steps for determining deployment related environmental exposures, provide available post deployment health resources, and describe approaches to communicating deployment related exposure issues to Veterans, their caregivers, and their family members.

WRIISC-HOME TMS Collections:

https://www.warrelatedillness.va.gov/WARRELATEDILLNESS/education/index.asp

VA Mobile Exposure-Ed App

- For health care providers
- Search for military-related exposure information, as well as VA's programs and policies
- Get tips on communicating risk to patients
- Print or email tailored information for patients during or after the visit
- Locate VA facilities



- Download: https://mobile.va.gov/app/exposure-ed
- View the training video: https://mobile.va.gov/training/exposure-ed

WRIISC-HOME FY23 Webinar Series

Military Exposures	Clinical Care	Data
GI	VET-HOME	Decision Making
Brain	PCPs & PACT	Brain Tumors
Skin		
Heart		

https://www.warrelatedillness.va.gov/WARRELATEDILLNESS/education/webinars/save-the-dates-2023.asp

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  Dr. Patricia Hastings, Chief Consultant
  - Dr. Michael Brumage, Deputy Chief Consultant
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  - Dr. Eric Shuping, Director of Operations
- **Airborne Hazards and Burn Pits Center of Excellence**
  - Dr. Anays Sotolongo, Co-Director
  - Dr. Nisha Jani, Epidemiologist
- **NJ War Related Illness and Injury Study Center**
  - Dr. Helena Chandler, Chief
  - Dr. Lisa McAndrew, Research/Education Director
- **CSP# 595 Team**
  - Dr. Paul Blanc, co-chair; Dr. Susan Proctor, co-chair (retired)
  - CSP# 595 Executive Committee
  - Dr. Petros Koutrakis HSPH exposure assessment team
  - CSP#595 Coordinating Center
    - Dr. Nicholas Smith
    - Karen Nakayama
    - Dr. Anna Korpak
    - Andrew Timmons, MS