Research Advisory Committee on Gulf War Veterans' Illnesses

Committee Meeting Minutes
September 7–8, 2023
U.S. Department of Veterans Affairs
Washington, D.C.

I hereby certify the following minutes as being an accurate record of what transpired at the September 7–8, 2023 meeting of the Research Advisory Committee on Gulf War Veterans' Illnesses.

KAREN BLOCK

Digitally signed by KAREN BLOCK
Date: 2023.10.12 09:41:31 -04'00'

Karen Block, Ph.D.
Designated Federal Officer
Research Advisory Committee on Gulf War Veterans' Illnesses

Cheryl Lyn Walker, PhD

Digitally signed by Cheryl Lyn Walker, PhD
Date: 2023.10.12 10:27:03 -05'00'

Cheryl Walker, Ph.D.
Chair
Research Advisory Committee on Gulf War Veterans' Illnesses

Attendance Record	
Members of the Committee:	**Invited Speakers:**
Dr. Cheryl Walker, Chair	Robert A. Bonomo, MD, FIDSA, AAP, AAM, FESCMID
Dr. Kenneth Ramos, Vice-chair	Linda Chao, Ph.D.
Dr. James Baraniuk	CDR Jean-Paul Chretien, M.D., Ph.D.
Mr. Ronald Brown	Beatrice Alexandra Golomb, MD, PhD
Retired Col. Richard Gaard	Amy M. Kilbourne, Ph.D., MPH
Dr. Drew Helmer	Shauna Stahlman, Ph.D., MPH
Mr. Thomas Mathers	Thomas Thomou, Ph.D.
Ms. Delphine Metcalf-Foster	William Watts, 1990-91 Gulf War Veteran
Ms. Sonya Smith	
Dr. Elaine Symanski	
Ms. Jane Wasvick	
Ms. Barbara Ward	
Mr. William Watts	**Special Consultant**
Dr. James Woody	Jeffrey Moragne, Director, Advisory Committee Management Office (ACMO)
Designated Federal Officer (DFO):	**Veterans Affairs Canada**
Dr. Karen Block	Dr. Amy Hall, Senior Epidemiologist
	Debbie Barry, Director of Disability and Healthcare Policy
Alternate DFO (Alt-DFO):	Dr. Nathan Svenson, Director of Research
Marsha Turner	
Committee Staff:	
Mr. Stanley Corpus	
Mr. Daniel Sloper	**Attendance: 113**
	Sept 7, 2023
	Call in: 19
RACGWVI Subcommittee Members:	Staff/ Committee: 17
Dr. Cheryl Walker, Chair	Online: 64
Dr. Kenneth Ramos, Vice-chair	In-person: 13
Mr. Ronald Brown	**Total: 113**
Dr. Drew Helmer	
Ms. Delphine Metcalf-Foster	**Sept 8, 2023**
Mr. William Watts	Call in: 4
Dr. Karen Block, DFO	Staff/Committee: 17
	Online: 43
	In-person: 9
	Total: 73
	Two Day Total = 186

Meeting of the Research Advisory Committee on Gulf War Veterans' Illnesses (RACGWVI)
Department of Veterans Affairs

SEPTEMBER 7, 2023 9:00am – 2:30pm ET		
9:00-9:10	**Welcome and Introductions** **Meeting Overview**	**Cheryl Walker, PhD** RACGWVI Chair
9:10-9:40	**Discussion with VA Leadership**	**Senior Leadership** **Department of Veterans Affairs**
9:40-9:50	Break	
9:50-10:10	**The Quality Enhancement Research Initiative (QUERI) Program**	**Amy Kilbourne, PhD, MPH** QUERI Director VA ORD Health Services Research & Development
10:10-10:30	**VA Science and Health Initiative to Combat Infectious and Emerging Life-Threatening Diseases (VA SHIELD)**	**Robert Bonomo, MD** Director, VA SHIELD Chief, Medical Service and Director, Geriatric Research Education and Clinical Ctr, Cleveland VA Medical Center
10:30-11:15	**Department of Defense - Defense Advanced Research Projects Agency (DARPA):** **Biological Technologies**	**Jean-Paul Chretien, MD, PhD** Commander, Medical Corps, US Navy Program Manager Biological Technologies Office, DARPA **Thomas Thomou, PhD** Senior Scientist & Engineer, DARPA
11:15-11:45	**Department of Defense Serum Repository (DODSR)**	**Shauna L Stahlman, MPH, PhD** Senior Epidemiologist Armed Forces Health Surveillance Division (AFHSD) Defense Health Agency--Public Health Directorate
11:45-11:55	Break	
11:55-12:20	**Gulf War Veterans and Sleep Apnea**	**Linda Chao, PhD** Research Biologist, San Francisco VA Health Care System Professor, Dept of Radiology, Biomed Imaging, Psychiatry University of California, San Francisco
12:20-12:40	**Update on an ICD-10 CM Gulf War Illness Diagnostic Code**	**Beatrice Golomb, MD, PhD** Professor of Medicine UC San Diego School of Medicine
12:40-1:30	Lunch	
1:30-1:40	**Veteran Shared Experience**	**Mr. William "Bill" Watts** 1990-91 Gulf War Veteran
1:40-1:50	**VA Gulf War Research Program Updates**	**Karen Block, PhD** Senior Program Manager Gulf War Research VHA Office of Research & Development (ORD)
1:50-2:00	**Veteran Engagement Subcommittee Report**	**Drew Helmer, MD, MS** Deputy Director, Center for Innovations in Quality, Effectiveness & Safety, VAMC, Houston, TX
2:00-2:30	**Committee Discussion**	**RACGWVI**
2:30pm	Adjourn	

SEPTEMBER 8, 2023 9:00am – 1:30pm ET		
9:00-9:05	**Welcome / Opening Remarks**	**Kenneth Ramos, MD, PhD** RACGWVI Vice-Chair
9:05-9:15	**RACGWVI** **Recommendation Process**	**Karen Block, PhD** Senior Program Manager Gulf War Research VHA Office of Research & Development (ORD)
9:15-9:45	**RACGWVI Work Group 1A** **Contextual feedback on draft recommendations**	**Dr. Jim Baraniuk**, **Ms. Sonya Smith** Co-Chairs, Work Group 1A
9:45-10:15	**RACGWVI Work Group 1B** **Contextual feedback on draft recommendations**	**Dr. Elaine Symanski**, **Dr. James Woody** Co-Chairs, Work Group 1B
10:15-10:30	Break	
10:30-10:45	**RACGWVI Work Group 2** **Contextual feedback on draft recommendations**	**Dr. Drew Helmer, Dr. Kenneth Ramos** Co-Chairs, Work Group 2
10:45-11:15	**RACGWVI Work Group 3** **Contextual feedback on draft recommendations**	**Mr. Ron Brown, Mr. Tom Mathers** Co-Chairs, Work Group 3
11:15-11:45	**Public Comment**	
11:45-12:30	**Committee Discussion** **RACGWVI Recommendations**	**RACGWVI**
12:30-1:30	Working Lunch **Committee Business** **2024 meeting plans**	**RACGWVI**
1:30pm	Adjourn	

Committee Meeting Minutes

Welcome, Introductions and Opening Remarks

Cheryl Walker, Ph.D., RACGWVI Chair

Dr. Walker welcomed and thanked everyone for joining the meeting. She then asked Dr. Block to give the committee its charge.

Welcome and Opening Remarks

Karen Block, Ph.D., VA Office of Research & Development and Designated Federal Officer, RACGWVI

Dr. Block, RACGWVI Designated Federal Officer (DFO) and Director of the Office of Research and Development (ORD) Gulf War Research Program in Washington, D.C. Stated this was a public meeting of the VA chartered RACGWVI. She thanked all participants for joining the meeting either in person or via Webex.

She noted the meeting was posted in the Federal Register, would be chaired by Dr. Cheryl Walker and vice-chair Dr. Ken Ramos, and met the required member quorum. The meeting was recorded and with written consent, all materials would be publicly posted following the meeting. Anyone not speaking should mute their microphones. The public comments portion of the meeting would be held on September 8, 2023. Dr. Block thanked the committee alternate DFO (alt-DFO) and committee staff for putting the meeting together. She also extended a special welcome and recognized:

- Representatives from Veterans Affairs Canada for joining the meeting in person. The Canadian armed forces fought alongside the U.S. and other allies in the 1990-91 Gulf War, and they also suffer with Gulf War Illness (GWI).
    - Dr. Amy Hall, Senior Epidemiologist for occupational exposures.
    - Debbie Barry, A/Senior Director, Disability and Health Care Policy
    - Dr. Nathan Svenson, Director of Research, Veterans Affairs, Canada (virtual).
- Dr. Rudolph Johnson, the new VA Military Exposure Research Program Director.

Questions/comments could be submitted in advance via the chat or email. Dr. Block returned control of the meeting to Dr. Cheryl Walker. Dr. Walker asked each committee member to introduce themselves.

Session 1: VA Leadership, Acting Deputy Secretary, Veterans Affairs

Guy T. Kiyokawa

Mr. Kiyokawa addressed the committee and guests and welcomed everyone on behalf of the VA Secretary. He noted that in addition to his professional titles he is himself a Gulf War Veteran (GWV). He spoke of working at Walter Reed Medical Center when the first cases of GWI were being identified and the frustration being expressed by both the Veterans and the doctors when trying to identify and diagnosis the problem. He also addressed the PACT Act and presumptive process, outreach to Veterans who do not use the VA for healthcare but are eligible for benefits, and VA research and the need for collaboration and sharing of information across the various departments and agencies. Mr. Kiyokawa then opened the discussion for questions from committee members.

Session 2: The Quality Enhancement Research Initiative (QUERI) Program

Amy Kilbourne, PhD, MPH

QUERI Director VA ORD Health Services Research & Development

The goal of QUERI is to support VA investigators to implement evidence-based practices into routine care using quality improvement methods. The QUERI program has been part of the VA for 25 years. Dr. Kilbourne spoke to QUERI's role at the office of enterprise integration, important ways of breaking down barriers between agency collaboration in research and work around

evidence-based policy. She also discussed QUERI's work around education and training of frontline providers to empower them to be more forward thinking in terms of implementing evidence-based practices. The purpose of QUERI is to accelerate research findings into routine care to ensure Veterans benefit from research discoveries. The program works with all 18 Veterans Integrated Service Networks (VISNs) and supports over 26 thousand providers to improve Veteran care. QUERI is organized under VA Research but funded through Veterans Health Administration (VHA) clinical operations to enable investigators to conduct implementation and evaluation projects aligned with VA priorities. The program has over 50 centers and over 26 million dollars in in direct funding. QUERI is embedded in the VA 2022-28 Strategic Plan, which involves evaluating programs and policies to ensure they work at the front line for Veterans in essence helping to get Veterans through the VA doors, and VHA leadership governance to support fulfillment of the Evidence Act, which requires agencies use evidence to justify budgets. The goal is to fund investigators in the field to conduct quality improvement initiatives, train VA workforce (including medical/care staff) in the implementation and quality improvement methods and increase VA workforce diversity. QUERI funds VA investigators to address national short-, medium- and long-term Veteran goals. Those include rapid response teams for time-sensitive national evaluation requests, such as COVID vaccines; medium-term (1-2 years) goals include advancing diversity in implementation leadership, evidence-based policy evaluation centers, VISN partnered implementations, such as treating opioid abuse; long-term (>2 years) goals include partnered evaluation initiatives, such as Veteran suicide prevention. All of which drive evidence-based policy and new scientific directions in VA. QUERI also developed several step-by-step methodologies for VA care providers and researchers to initiate, sustain, and improve their processes to improve Veteran care. QUERI centers for further information:

- Evidence, Policy and Implementation Center (EPIC)
- Center for Evaluation and Implementation (CEIR)
- Designing for Dissemination and Implementation (D4D&I)

Committee Questions and Comments:
In a previous meeting the committee heard about efforts to provide doctors with GWI awareness training. Does QUERI maintain or monitor the status or success of that program?
The study remains unfunded and has not yet started.

How many Veterans were involved, as in directly a part of the group and giving input, in the development of QUERI programs?
Each of the 440 programs responsible for designing and conducting implementational initiatives work with a Veteran Engagement Council.

Does QUERI provide training to all VA hospitals? From Veteran perspectives, no two VAs are the same, each provides a different level and/or form of care.
Due to the small size of the program, no, they do not have enough people to train each VA with quality improvement programs.

These programs do not seem to be happening at the Miami VA, how can these programs become VA universal?
Dr. Kilbourne knows some of the staff at the Miami VA and would love to further connect with the facility and increase awareness throughout that VA region.

How can VA make research and clinical trials stronger so they can be considered for implementation versus pilot studies that are too small to be translated to clinical use?
That is the purpose of the Veteran groups working with QUERI., The program asks Veterans about their important research and/or care concerns and then tries to focus projects in those areas. Also, the program is looking at pragmatic clinical trials and studies that are patient centered, focused on treatments and are feasible.

Session 3: VA Science and Health Initiative to Combat Infectious and Emerging Life-Threatening Diseases (VA SHIELD)

Robert Bonomo, MD
Director, VA SHIELD, Chief, Medical Service and Director, Geriatric Research Education and Clinical Ctr, Cleveland VA Medical Center

Dr. Bonomo started the presentation by discussing the medical challenges of the medically unexplained illnesses related to the GW, which included chronic fatigue syndrome, fibromyalgia, functional gastrointestinal disorders and other symptoms and conditions. Some of the medical issues were attributed to the region such as Brucellosis, C. jejuni, C. burnetiid, Shigella, and others, all of which were infectious diseases diagnosed in GWV within one year of separation. The goal of VA SHIELD is to improve the Nation's preparedness for national emergencies and to support emergency management, public health, safety and homeland security efforts. VA SHIELD is not a research center. It is a comprehensive, secure biorepository of specimens and associated data related to COVID-19 and other emerging diseases. Those specimens and data are/will be available to VA investigators and others to advance scientific understanding in support of developing diagnostic, therapeutic and preventative strategies for use in clinical care. VA SHIELD was established in 2020 to provide VHA with a comprehensive repository related to COVID-19. It enhanced collaboration with external partners; initiated mechanisms to harmonize specimen and data collection procedures and allow for a flexible response to dynamic disease occurrences. VA SHIELD's vision is to advance rapid detection, therapy and prevention of emerging diseases aimed at improving Veteran care. Its mission is to provide researchers and clinicians with high-quality bio samples and comprehensive associated medical and sample data to accelerate the discovery-to-therapy pipeline. The purpose is to create a comprehensive infectious disease, and other clinical syndromes, repository of specimens and associated data available to advance research, improve diagnostic and therapeutic capabilities and develop strategies for immediate deployment in VA's clinical environments. VA SHIELD is part of ORD and has steering committees for strategic and scientific guidance which help maintain group integrity and mission. The group has established governing documents that guide each aspect of the group. The VA SHIELD executive steering committee establishes programmatic priorities and scientific agendas; provides strategic oversight; reviews VA SHIELD performance and management. The programmatic and scientific review board reviews and decides on specimen and data requests; balances limited sample availability and prioritizes requests; ensures utilization of specimens per strategic objectives. There are multiple VA SHIELD facilities, both collection and repositories, across the U.S. It collaborates with multiple Federal agencies (e.g., CDC, NIH, DOD), VA projects that contribute to the repository and projects that do not contribute to the repository. Dr. Bonomo asked how VA SHIELD can help the RACGWVI? As GWV seek medical attention in designated clinics and with specialty trained providers, VA SHIELD has protocols in place (sweep and umbrella) to assist the collection of biospecimens that can be used for research. Furthermore, VA SHIELD helps GWV by being good stewards of Veteran biospecimens and associated data and ensuring all samples are used for approved research projects that demonstrate scientific merit and feasibility. VA SHIELD continues to closely work with the Military Exposures Research Program (MERP) who's mission is to advance military exposures assessments, understand the effects of military exposures on Veterans' health outcomes and inform care and policy. VA SHIELD has been approached by MERP to facilitate the integration and/or storage of MERP specimens.

Committee Questions and Comments:
What is the path for outside clinicians or investigators to work with VA SHIELD?
There is a system under development where a non-VA investigator can send their idea to a coordinating center. The center reviews the idea and forwards it to the scientific advisory board which evaluates the merits and impact of the study. The decisions are made by the executive steering committee and coordinating centers.

What is the size of the repository?
Currently there are about 75 thousand COVID-related samples that are stored at Palo Alto and Tucson with potential to grow and store at other Federal-approved facilities. As part of sample collections various research platforms are considered, such as biomarkers.

What is the sample consenting process?
There are two means to collect samples. There are clinical remainder specimens that are exempt from human subject research and do not need consent, and an electronic informed consent process is currently under review by institutional review boards (IRB) at individual VA SHIELD collection sites.

As a non-VA investigator how can I work with VA SHIELD to have access to specimens?
VA SHIELD wants to work with outside investigators , however, as with all research submissions the project must go through a full scientific review by the board. The procedures and processes to partner with outside VA collaborators are still in development.

What is the timeline for implementation of procedures to collaborate with outside VA investigators?
The review process takes about a month or two. There is no funding process, just sample sharing.

How is VA SHIELD working with the Million Veteran Program (MVP)?
Many computer systems and platforms used by MVP were used to build VA SHIELD. VA SHIELD wants to continue to work with MVP and other VA Cooperative Study Programs serving as one of their biorepositories.

Session 4: Department of Defense - Defense Advanced Research Projects Agency (DARPA): Epigenetic Characterization and Observation (ECHO)

Jean-Paul Chretien, MD, PhD
Commander, Medical Corps, US Navy, Program Manager, Biological Technologies Office, DARPA
Thomas Thomou, PhD
Senior Scientist & Engineer, DARPA

Dr. Chretien stated the core idea of ECHO is to detect human exposure to different chemical, biological, radiological, nuclear (CBRN) and infectious disease agents by looking at genetic sequence changes on a patient's DNA. The program's vision is attribution and diagnostics from a specific, temporal, human signature using the epigenome as the body's record keeper which can be obtained quickly with a field deployable platform in 30 minutes or less. The tests look for structural and chemical modifications that influence gene expression. Some of those modification-causing agents can remain latent and asymptomatic for months or longer but would still cause an impact on the genome and are therefore ECHO detectable. The testing has also been successful in determining when the insult occurred. The tests can determine up- and down-stream genetic modifications down to a single cell level of detection. The program has two aspects, the first is the technical area which is the development of epigenetic signatures for detection; the second is the development of a portable platform. Technical area 1 is currently focusing on metrics and pressure tests. There are two phases each with a specific development timeline. Currently they are conducting blind-sample testing of the system with a goal of 85% accuracy. Technical area 2 is working on the deployable platform. Their goal is to develop a unit that is easy to use, small and portable for taking into a field situation and provides quick analysis. Part of the ECHO development process is an independent validation and verification process which is done with collaborating non-DOD/outside partners. Currently ECHO is in the process of transitioning both resources, the data and the platform, to other government partners at Food and Drug Administration (FDA) and Defense Threat Reduction Agency (DTRA) and Walter Reed Army Institute of Research.

Regarding the timeline, the ECHO device is in its final development stages and is being prepared for hand-off to partners. Dr. Chretien then asked Dr. Thomou to present case studies.

Dr. Thomou stated he is a contractor and technical advisor and does not represent the U.S. government, however, what he does represent are the meticulous results from the program and the people involved with it. The goal of the project was to develop a system that could go directly to human use; it was not tested using animal models. Following all regulations, the program was able to develop the model using HIV because of its human-to-human transmission. The first case presented was on S. aureus. A BioNNET/PLIER—AI (artificial intelligence) neural network was developed for ECHO. BioNNET/PLIER is a modular approach which builds on established tools for -omics data analysis to identify networks and genes in human exposure samples. Those tools helped the team refine ECHO to a single cell format. Single cell epigenetics and unique AI analytics identify distinct Methicillin-sensitive Staphylococcus aureus (MSSA) and Methicillin-resistant Staphylococcus aureus (MRSA) host response pathways. The single cell epigenetic approach identified host networks and genes that discriminate MRSA from MSSA even in small sample sizes. The curated compendium of blood gene expression data on viral, bacterial, parasitic and non-infectious conditions from human subject in vivo. The compendious enables them to validate a signature's robustness and pathogen specificity. In the S. aureus study, ECHO signature accurately and specifically classified 12,202 samples from 138 studies. Another study was done using organophosphates using samples from farm workers who were exposed to chemicals similar to military chemical weapons. Future ECHO studies will be looking at Ebola.

Committee Questions and Comments:
What platform is used for testing, is it DNA methylation?
Yes, DNA methylation is part of it.

To clarify, this test can take a drop of blood, and by looking at a single cell, it can determine an environmental exposure occurred, correct? How does that relate to an exposure in a GWV that occurred 30-plus years ago?
It depends on the exposure, if there are good records of when the exposure occurred and the sample was collected, but yes, it is possible.

The sensitivity and specificity of 85% seems low. What do you consider the minimum criteria for using this testing unit in the field?
First, the level of performance for this type of state-of-the-art testing was low and the group has taken years to get it to the current level of performance. The next step is to perfect the technology and make it ready to hand-off to other groups for further refinement. 85% performance is the limit for FDA approval.

There were dust storms throughout the Kuwait/Iraq region. How would the detection system account for all the various particulate matter blowing in from various locations?
Agree that level of complexity can be an issue. Those types of factors were considered when developing the data set and in the proof-of-concept stage of development.

Have you linked any of these signatures to health outcomes? Are you doing anything with histone modifications.
Yes, to both questions and Dr. Thomou will speak to those in the study examples.

Are there plans to expand the infectious and non-infectious exposures detected by the system?
Yes.

Are you evaluating the epigenomic age as part of the tests?
Depending on the type of sample collection, it might be possible.

At the single cell level, are you using sorting or cyber sorting?
We do not use cyber sort.

You develop your signature on a cell type, specific level, correct? But when validating are you just looking for the signature in everything?
Yes, correct. Validation looks at everything.

Could the system detect anthrax that was supposed to be in the GW?
Actually, we looked at anthrax vaccinations because those were the samples they had access to. There were no confirmed anthrax samples in the GW.

Regarding S. aureus, what was the time before detection?
Twenty-four hours.

You [ECHO] has a 70% accuracy rate for the presented chemicals?
Yes, actually for some organophosphates even greater percent accuracy.

Will ECHO be able to identify signatures in serum samples from 30 years ago?
Most of the tested sample are peripheral mononuclear cells that were viable when frozen. Serum samples will be a different approach which has been developed and is currently under review by FDA.

How is the project managing confounding signatures?
Through the collection and processing of as much data and meta-data as possible to see/understand the confounding signatures and correct for them.

Have you looked at MERS?
No.

Session 5: Introduction to the Department of Defense Serum Repository (DODSR)
Shauna L Stahlman, MPH, PhD
Senior Epidemiologist, Armed Forces Health Surveillance Division (AFHSD), Defense Health Agency--Public Health Directorate
The DODSR began in 1985 as part of the mandatory HIV screening of service members. The DODSR provides support to clinical, operational and research studies, but does not conduct research. The Defense Medical Surveillance System (DMSS) provides the sole link between medical surveillance data (e.g., personnel, military experience, medical outcomes) and specimens in DODSR. Both groups fall under the Armed Forces Health Surveillance Division (AFHSD), which is a comprehensive health surveillance support to the Joint Staff, Combatant Command and Military Service. The DMSS system has samples to include personnel data, medical data, laboratory data and deployment data. The primary focus of the DMSS is on retrospective surveillance and looking for trends in locations. They are the only DOD location for all electronic and periodic health assessments for all service branches. Although the organization does not conduct research themselves, they provide consultative support and curated data extracts for researchers requesting data from the organization. Currently the DODSR holds over 72 million serial specimens from over 12 million individuals. The specimens are linked to demographic, military and medical information via DMSS. Payment agreement required for studies requesting >100 aliquots is $25 per aliquot. Samples have been used for operational health surveillance, research support, and patient care.

Committee Questions and Discussion:
At the time of consent, have the service members agreed to be recontacted?
No consent is given at the time of sample collection. The samples immediately become the property

of the DOD.

Is it possible to get a sample without consent for study use?
It would have to be stripped of all personal identifiable information (18 HIPAA identifiers).

Do you know how many samples you have from the 1990-91 GWV cohort?
Yes. Those type of questions are a common type of study sample data request, as investigators want to know how many samples from a cohort will be available for a specific study. Also, depending on the time period, samples before 2014 are identified by social security number, after 2014 the samples have a DOD identifier number.

What is the timeline for an outside investigator to put in a request for aggregated data assessment and continued follow-up on that group of patients?
The first step would be to connect with a DOD co-investigator, develop a study plan and submit it to DODSR. Once the protocol is submitted, the DODSR review board meets every Thursday, so usually feedback/response is given to the researcher by the next day, Friday. Also, the researcher will have to work with their IRB approval process and their timeline. The DOD data sharing agreement and payment agreement takes a bit longer which can be two to three months. Depending on the level of complexity and type and/or amount of samples requested, it can take about three to four weeks to months.

Session 6: Apnea, Insomnia, and Cognition in Veterans with Gulf War Illness

Linda Chao, PhD

Research Biologist, San Francisco VA Health Care System, Professor, Dept of Radiology, Biomed Imaging, Psychiatry, University of California, San Francisco

Dr. Chao published a report in 2016 in the journal of Military Medicine entitled "Insomnia Severity, Subjective Sleep Quality, and Risk for Obstructive Sleep Apnea in Veterans With Gulf War Illness."
Screening for obstructive sleep apnea (OSA) is done using the STOP method: Snore loudly; Tired, fatigued, or sleepy during daytime; Observed apnea, gasping during sleep; Pressure (high blood pressure). Her studies found that GWV diagnosed with GWI were at higher risk for OSA. She then used VHA's electronic health record (EHR) to determine if GWV had a higher incident of OSA than other era Veterans. From the VA Informatics and Computing Infrastructure (VINCI) data of GWV using the VHA, 37.2% of deployed GWV had ICD-10 code G47.33 (OSA) in their EHR which was a significant difference when compared to non-deployed GWV. Other researchers published data showed individuals with higher exposure to nitrogen dioxide and airborne particulate matter greater than 2.5 microns had greater odds of sleep apnea, which is important because of all the smoke, fumes and dust in the GW. Data from a non-GWI related study showed a relationship between sleep apnea and pesticide exposure in a study of U.S. farmers. It was established that there were many GWV exposed to carbonate, inorganic phosphate pesticides in the GW. Other published studies presented also supported the hypothesis that deployed GWV suffered from sleep issues at a statistically greater percentage than non-deployed. Currently a GW Air study is being conducted. The study enrolled GWV using the Kansas definition of GWI and insomnia and OSA. The study involves a clinical interview and home sleep apnea test.

Committee Questions and Discussion:
Even though I use a CPAP machine my glucose levels change during the night and according to the machine the path is typically 98 to 100% but my wearable device records a sleep score of approximately 60% with very little mental or physical recovery. Has anyone looked at this type of issue?
The current study described does not look at those factors, however, those are interesting issues and could be something to explore in future studies.

Did you look at changing cortical grade volume over time and compare it to a historical control value?
It was not a longitudinal study, just a cross section.

Did you look at grey matter/brain volume in GWV samples or any of the cortical samples?
No.

Is there an OSA difference between GWV and others?
Yes, in the study sample deployed GWV had a higher rate of OSA than non-deployed GWV.

How do these studies get to VA?
That is policy and cannot speak to that.

If you compare all GWV to all non-GWV the numbers are similar. Using the non-GWV group, if you broke that down to deployed vs. non-deployed would the values be similar to the GWV deployed vs. non-deployed?
I have not done that analysis.

There is a lack of women in the OSA study. What can the committee do to help improve women's participation in the study?
OSA is predominately a male problem, but yes, there is a lack of female participation and maybe increased awareness of clinical studies could help.

Have you looked at central sleep apnea?
No.

Can you speak to your thoughts on the pathophysiology that connects environmental exposures to OSA?
Not being a physiologist, I cannot speak to environmental exposure impacts.

How are Veterans being recruited for the study? How are women being notified?
The study is specific to GWV only. Specifically at the San Francisco VA they do not allow flyers to be posted in the building; otherwise, the study is/was posted on electronic bulletin boards and clinicaltrials.gov and annual newsletters.

Session 7: Update on an ICD-10 CM Gulf War Illness Diagnostic Code

Beatrice Golomb, MD, PhD
Professor of Medicine, UC San Diego School of Medicine

The information presented is on behalf of the consortium of GWI clinicians, researchers and patient advocates. The 1990-91 GW had unprecedented exposures and many who served became ill. GWI has been attributed to drug/chemical/toxic exposures and has an increased risk of comorbidities. Because of those and other factors, an ICD-10-CM code is needed. GWI is defined by a complex of symptoms that occur in domains that are highly consistent across GWV populations and studies. The modified Kansas criteria research definition is being used for the ICD process. Federal research on GWI funds includes 44 clinical studies, nine patents and 277 papers. An ICD-10 code would aid research, epidemiological tracking, clinicians and patients.

If we have a code do we have a definition?
We are using the Kansas definition.

Can we [the RACGWVI] use your definition to submit a recommendation of support to the VA Secretary?
Yes!

What is the status of the approving the ICD-10 code?
The CDC is having a meeting on it September 12, 2023.

How does your definition compare to ME/CFS?
Again, we are working with the Kansas definition. Described symptoms need to have started six months after returning from the GW, as described in the Kansas definition.

What is the path to getting the ICD-10 code?
The CDC has already had a preliminary meeting and the next meeting will be September 12, 2023.

Point of clarification; did you say that GWI symptoms needed to arise during or immediately after the GW to be eligible? Is there a time limit?
No.

There needs to be room for symptoms or conditions that arise that are not from GWI, such as a fall from standing resulting in broken bones.
Yes, and most clinicians would already understand those situations and conditions.

Session 8: Veteran Shared Experience

Mr. William Watts
1990-91 Gulf War Veteran

Mr. Bill Watts spoke of his experience of being a GWV and serving in the GW. He described in detail what life in the desert was like and how it impacted both his mental and physical health. He spoke to coming back to the U.S. and developing GWI and trying to seek care at the VA and being told there was nothing physically wrong with him and it was all in his head. He spoke to reaching a low point and considering suicide because of all his health issues. It was at that point in his life he decided that he would become a Veteran advocate and help other GWV instead of becoming another Veteran statistic. He also spoke of the disparity of care at VA hospitals and clinics and the difficulty those facilities have in staff retention and training. Also how difficult it is for Veterans to apply and qualify for VA benefits. To this day Bill remains a powerful GWV advocate for his Tampa Bay, Florida Veteran community. He has started a non-profit group and routinely travels around his state and the country to help Veterans.

Committee Questions and Discussion:
The RACGWVI is proud to have Bill Watts both as a member and, more importantly, as a friend.

Session 9: VA Gulf War Research Program Updates

Karen Block, PhD
Senior Program Manager Gulf War Research, VHA Office of Research & Development (ORD)

Dr. Block described the PACT Act Section 501 which expands eligibility compensation for GWV as well as identifying GWI among the cohort of GWV. In accordance, VHA is preparing a compensation questionnaire as well as education on how to manage GWI for VA personnel. During the GW, service members were exposed to single and/or a combination of toxicants of unknown quantities that has made exposure assessment a challenge and difficult to identify the exact etiology of GWI. Regarding research, from 1997 to 2022 VA/ORD has funded over 250 research projects with an average funding rate of 21%. There are four major research areas: 1.

Biomarkers/Mechanisms (39%); 2. Model Systems/Preclinical studies (32%); 3. Clinical Trials Implementation (18%); 4. Other Resources (11%). Under area one, the current research focus is on systemic inflammation, intestinal microbiome dysfunction and high lipid metabolism and oxidative stress. VHA Health Outcomes Military Exposures (HOME) and Office of Research and Development (ORD) provide different strengths to generate evidence and inform policy on GW and military exposures health outcomes.

Committee Questions and Discussion:
Could you explain the reference to a central IRB?
The central IRB's goal, instead of submitting a proposal to different sites, there is one central location for proposals.

Can you talk about project IN-DEPTH?
It is a collaborative study between the VA and NIH looking at in-depth phenotyping of GWV w/out GWI. Current project status is recruiting patients. This project is similar to a previous chronic fatigue syndrome project NIH conducted.

Will GWI become an active management portfolio?
It might, but nothing has been determined yet.

Is there an IN-DEPTH website where a GWV can go to participate.
Yes. NIH Investigative Deep Phenotyping Study of Gulf War Veteran Health (Project NIH IN-DEPTH)

Is Project IN-DEPTH still not accepting anyone with COVID?
Yes. The study is trying to keep all samples clean and GWI specific. However, experts are being brought in to discuss the situation and the impact on the study.

Session 10: Veteran Engagement Subcommittee Report
Drew Helmer, MD, MS
Deputy Director, Center for Innovations in Quality, Effectiveness & Safety, VAMC, Houston, TX
The last Veteran Engagement Sessions were hybrid (online/in-person). Attendance for the two sessions was 84. Questions used were updated versions which initiated some rich conversations where participants shared their experiences and had suggestions about how they deal with GWI. Common comments were about lack of ICD-10 code for GWI and lack of VA provider education for GWI.

Session 11: Committee Discussion
RACGWVI
Closing Remarks:
Cheryl Walker: Officially closed the meeting. She thanked all the Veterans and speakers who participated and asked the GWV and speakers to join the VES later in the day and the continuation of the RACGWVI meeting the next day, Sep 8, 2023.

Meeting Adjourned.

Day 2: September 8, 2023

Session 1: Welcome / Opening Remarks

Kenneth Ramos, MD, PhD

Thanked everyone for joining the meeting and for making day one so successful. He covered the tasks for the second day of the meeting to hear from and review the recommendations from the four different working groups and then to draft and finalize the wording for the recommendations to the VA Secretary (SECVA). Karen Block will provide information on the recommendation process and previous recommendations.

Session 2: RACGWVI Recommendation Process

Karen Block, PhD

Senior Program Manager, Gulf War Research, VHA Office of Research & Development

Dr. Block presented a past and present overview of all RACGWVI recommendations. Included was the SMART template from the FACA handbook on how to develop and write a recommendation. There are three outcomes to a recommendation:

- Concur: VA agrees with the recommendation and will implement
- Concur-in-principle: VA agrees with the recommendation, but is unable to implement
- Non-Concur: VA does not agree with the recommendation and will not implement.

Of the RACGWVI recommendations submitted, 10 were concurred, 4 were concur-in-principle.

Session 3: RACGWVI Work Group 1A Contextual feedback on draft recommendations

Dr. Jim Baraniuk, Ms. Sonya Smith, Co-Chairs, Work Group 1A

Group focus is on how to better engage GWV in research studies, industry trials and health disparities. The group has three recommendations.

- Improve diversity in clinical trials. To accomplish that suggestion, it is recommended to partner with VA ORD and Health Services Research & Development Diversity, Equity and Inclusion Initiative. It is suggested to invite a speaker from that group to help guide the committee.
- Improve GWV GWI engagement.
- Improve protocol approval for subject recruitment by non-VA investigators.

Committee Questions and Discussion:

Wording should be more specific on recruitment of GWV for outside/non-VA investigators, allowing non-VA investigators to recruit GWV at a VA facility. New wording can be, “adopt a special provision to streamline the recruitment of Veterans for both war injury and toxic exposure research by non-VA investigators, investigators funded by other Federal agencies.”

Recruitment should include flyers posted at each VA because many Veterans do not use research websites.

There are other issues involved in advertising besides just posting a study. There are safety and ethical concerns; however, there are VA facilities that could do it better. Better wording could be ‘improved tactics or strategies’ instead of ‘recommended.’

Regarding non-VA investigators, they need easier access and unified rules across the system to contact study participants.

This would be a new recommendation: Adoption of best practices across VAs. It would also be helpful to have people in place at VAs to help researchers with recruitment. The committee could ask the SECVA to support regionalization of research and to update the Federal Register to make it easier to contact research participants.

A simple solution could be to include a question in the set of intake questions that all doctors and nurses ask Veterans when they have a VA clinic visit, asking if the Veteran would like to be contacted about GWI research studies. That would be a form of consent. This will be added to the

recommendations as a bullet point.

There also needs to be provider knowledge of DoD funded studies.

Action items:
- Ensure action-oriented wording.
- Add a recommendation to include an added opt-in question to the primary care questionnaire that Veterans complete at every visit about 'willingness to participate in research.'

Session 4: RACGWVI Work Group 1B Contextual feedback on draft recommendations

Dr. Elaine Symanski, Dr. James Woody, Co-Chairs, Work Group 1B
Group focus was on optimizing research data and sample resources.
The group supports the recommendation to develop a single sourced website that would provide an inventory of data and biospecimen resources that can be used for GWI research. That information should also include population and military service history information. The repository should have clear instructions/agreements about who can access the data and how to access the data for both VA and non-VA researchers. For resources currently not available, there should be a process initiated to establish a mechanism for access. The website could also include highlight major findings with clinical relevance or policy implications and fill-in knowledge gaps. The VA should consider including in the informed consent process for future studies, permission to access legacy samples and to allow access to biobank samples and other data, and to establish linkages across relevant databases to address critical research gaps in GWI. The VA should consider secondary data analysis with the primary objective to harmonize existing data sets across two or more VA-sponsored projects by all researchers. There should be a targeted Request for Applications (RFA) to determine the utility of the DoD serum repository.
In the development of the single source website there should be input and user-stories from Veterans on what they would want. Regarding the IRB information/consent process, the VA needs a central coordinating office.
The committee needs to understand these are the first steps in a process; these are the recommendations that initiate future research that will eventually go into a clinic.

Committee Questions and Discussion:
Language about collaboration and matching funds needs to be specific.
Targeted RFAs would be a strong recommendation, with subpoints that make the language more specific. This recommendation is going to need the language refined and should be tabled from the current recommendation for future discussion.

Recommendation #2, "Establish mechanisms that facilitate interagency GWI research to increase and leverage aligned research efforts within the VA, DoD and other institutions." Based on discussions, the idea was to review existing sponsored studies for subject/study overlap and determine if those overlapping data can be applied to the study question. Another way to do this would be similar to a (Virtual Consortium for Translational/Transdisciplinary Environmental Research)-type mechanisms such as is used for NIEHS grants. The committee could discuss a specific RFA that specifically supports a VA-funded collaboration going in a new direction with new, non-VA investigators.

Using MVP as an example, there is not an RFA as part of that program, yet there has been a tremendous amount of work accomplished. Putting out an RFA would be a very attractive way of generating additional hypothesis testing and leveraging resources.

Have Veterans involved in MVP given consent to be contacted about research across all VA

platforms? Can the MVP participants be contacted? Yes, but it must go through MVP and should be discussed with MVP.
It seems wasteful that there are all these lists, but no one can access them.

The VA has release forms, why can't a Veteran sign a form allowing information to be shared?
That would require modification of the informed consent form, which can be done.
There is also a VA privacy policy in the VA care agreement that outlines how information will be used. That form is governed by laws.
Even if the Veteran gives consent?
If the Veteran gives consent, then yes, that information can be shared.

There seems to be a lack of understanding on how information can be used.
The private healthcare sector struggles with similar issues and there has been a movement towards universal language for all users.
But this is retrospective consent.

Prospectively, the Military Exposures Research Program (MERP) developed universal consent protocols which includes language allowing the patient to be recontacted. This could be adapted to the Gulf War program.

Action items:

- Add RFA as 2C. Draft the wording for the RFA.
- Review the language of the new suggestions at a future meeting date.

Session 5: RACGWVI Work Group 2 Contextual feedback on draft recommendations
Dr. Drew Helmer, Dr. Kenneth Ramos, Co-Chairs, Work Group 2
Group focus on health care effectiveness which includes research to advance integrated care for Veterans including specialty clinics, integration of ILER with care and physician education. Advancing integrated care for Veterans, including specialty clinics that can then be leveraged for important research activities is well reflected in the proposal for regional specialty care clinics in proposal one. Similar recommendations have been made going back to 2016. There are VA specialty clinics such as WRIISCs that are not solely focused on GWI but address military toxic exposure health concerns. The model and approach are established in the VA and the committee would like to see more of these clinics in the VA.

Committee Questions and Discussion:
What would it take to do that, what's changed?
The PACT Act has provided leverage to push for these types of clinics and this may be a window of opportunity for these clinics to happen. Adding wording from the PACT Act may benefit these recommendations and should be added to the preamble.

Regional Research Units (GWI-RRUs): The vision is to have a GWI-RRU in each VISN (Veterans Integrated Service Networks) to facilitate research resources. They would be a clinical integration unit charged with research and recruitment. An example would be similar to a WRIISC, partnering with researchers to conduct multi-site research. These centers should be a primary care clinic that see Veterans but also include a research liaison to walk the patient to the research clinic and consent the Veteran to be part of a study. The GWI-RRUs would also help researchers with accessing repositories and collaborating with other centers. Clinicians in the clinics would be experts in clinical care and clinical research. In addition to a coordinator, it was suggested to have "a Veteran Navigator to help guide and educate other Veterans through the research process and ensure they are full educated about a study."

Action items:

- Add language on the PACT Act to the preamble of the recommendation document.
- Add the GWI-RRU as a sub-bullet to the recommendation (infrastructure).

Session 6: RACGWVI Work Group 3 Contextual feedback on draft recommendations
Mr. Ron Brown, Mr. Tom Mathers, Co-Chairs, Work Group 3
Focus of the group is on specific GWI-related topics such as sleep apnea, myocardial ischemia, biomarkers of exposure/response and others. The group had three items for discussion.

1. The ICD-10 code for GWI
2. Sleep apnea
3. High rate of denials for GW Veterans with GWI for presumptive conditions

ICD-10 code for Gulf War Illness: The decision to add an ICD-10 code for GWI is being made by the CDC. Agenda was posted in the Federal Register. Their September meeting is being held on Zoom with an open invitation for public participation. October 13, 2023 is the deadline for all public comments to be submitted before the CDC's final decision. The timeline of events is:

- May/June 2023: final code updates and addendum posted (CDC).
- September 12-13, 2023: ICD-10 coordination and maintenance committee meeting via Zoom.
- October 13, 2023: deadline for public comments to be submitted to CDC/NHCS.
- November 2023: any new ICD-10 codes approved for implementation will be announced.
- April 1, 2024: implementation of new codes.

The proposed code Z77.3 defines GWI and includes suspected exposure.

Committee Questions and Discussion:
After committee discussion a motion was made and seconded that the RACGWVI draft and send a consensus letter to the SECVA asking him to support the adoption by the CDC/NCHS of the proposed GWI ICD-10 code ~~Z77.3~~. A vote was put before the RACGWVI, and the motion was unanimously approved.

Action items:

1. Recommend SECVA issue a statement of support to CDC/NCHS as soon as possible, but no later than the October 13, 2023 deadline for public comment.

RACGWVI initially planned a third action item to submit a consensus statement in writing by October 13, 2023, for codes being considered for April 1, 2024, to CDC/NCHS: nchsicd10cm@cdc.gov. However, Karen Block, DFO, pointed out that this may be outside the purview of the committee. Jeffrey Moragne, Director, Advisory Committee Management Office (ACMO) should be consulted to ensure proper conduct.

(Per committee discussion session, section 8 below) Further discussion with Mr. Moragne confirmed that the committee itself cannot send a consensus statement to the CDC/NCHS because of FACA guidelines and the restrictions of the committee charter, noting the committee's charge is to provide advice and make recommendations to the SECVA, not the CDC. However, individual committee members acting and speaking as private citizens can petition the CDC/NCHS to adopt the ICD-10 code. Private citizens may also note RACGWVI is on public record supporting the adoption of said code for GWI at this open public meeting on September 7-8, 2023 with plans to request the SECVA submit a statement of support to the CDC/NCHS.

2. RACGWVI Chairs will submit a recommendation to the SECVA on behalf of the full committee recommending the SECVA send a statement of support to the CDC/NCHS via email in support of adoption of the ICD-10 code for GWI by the deadline for public comment on October 13, 2023.

Sleep Apnea: The initial step to understand sleep apnea, its impact on GWV and if it is linked to GWI was to have Dr. Linda Chao speak to the committee on Sep 7, 2023. Based on the information presented by Dr. Chao and gathered by the group, the committee should determine how to move forward with this recommendation. The group would like to recommend that the SECVA look into sleep apnea issues with GWI for consideration as a presumptive condition for GWV.

High denial rates: The working group asks if there is something the SECVA can do or look into to determine if this is a problem and why it is happening. Dr. Walker asked if this can be tabled to the next meeting because of the amount of data involved and the importance of these claims.

Session 7: Public Comment

Visitors and Invited Guests

Amy Hall, Senior Epidemiologist, Veterans Research Canada. She is joined by Debbie Barry, Director of Disability and Healthcare Policy for Veterans Research Canada. They thanked the committee for all its work and how wonderful it was to hear from the GWI researchers, the committee members, GWV in the room and all the support and connections.

Debbie Barry: Thanked the RACGWVI and is already sending notes to her team about the meeting.

Male GWV: Brought up several topics to include the lack of treatments for GWI. He would like more emphasis on treatments for GWI not just a referral to another clinic; GWV need to have VA denial of claims reviewed; he suggests that there is too much emphasis on basic research not enough on treatment/clinical research.

Female GWV: She spoke of being on the CDC call for the ICD-10 code; there were medical doctors as part of the GWI ICD-10 code call who spoke. She supported that individuals send in their support of the code. She suggests the RACGWVI recommend more WRIISCs; asks for meeting minutes to be posted faster; recommends more advertising of clinical studies.

Female GWV: Commented that many of the studies for GWV are difficult due to lack of compensation for travel. Many GWV cannot afford to go to study centers.

Male GWV: Commented on how hackers troll (def: *to antagonize (others) online by deliberately posting inflammatory, irrelevant, or offensive comments or other disruptive content*) his GW Facebook page about the meeting and wants the committee to know this is happening; he also suggests the committee needs to raise their collective voice and work together as a group to force the VA to action.

Female Veteran: Asks the RACGWVI to look into vaccine-caused injury in Veterans.

Female GWV: Concerned about the accuracy of VA doctor notes in her medical record.

Session 8: Committee Discussion RACGWVI Recommendations

RACGWVI

Jeff Moragne, Director, ACMO: In accordance with your [RACGWVI] Federal Charter, your charter limits your voice. Your advice and recommendations to SECVA can only be within the duties and responsibilities as stated in the charter and cannot be outside it. In a nutshell, your wording creates an impression that you are speaking for the department and not as an advisory committee to the SECVA. Yes, individuals can comment in public as private citizens but not as a consensus statement from the committee. Second, do not attach to your public and private citizen comment that you are a member of the RACGWVI because that will give the impression that the committee again is endorsing a certain recommendation.

Can the RACGWVI make a recommendation to the SECVA to support the GWI ICD-code?
The committee is tasked with research recommendations and can generate a letter of support indicating how an ICD code would impact or involve research.

Can the members as private citizens send a letter of support to the CDC that says they supported this in a public record?
No, because that letter still gives the impression that a federal committee is speaking for an agency

and endorsing a course of action. Mr. Moragne suggests posting the public minutes detailing the discussion and action by the committee on this topic, then as a private citizen refer to that document in any letter of support. He thanked the committee for taking the time to discuss the legalities of this topic and making sure they are doing it right.

The RACGWVI amended its motion that the SECVA endorse the ICD code and as private citizens send letters of support to the CDC on the ICD code and use the meeting minutes as a reference. Motion to amend made and seconded. The committee can send a recommendation to SECVA and members can send a letter of support as private citizens to the CDC regarding the code and refer to the RACGWVI meeting minutes from September 7-8, 2023 as reference.

Session 9: Working Lunch, Committee Business 2024 meeting plans

RACGWVI

Suggested meeting times and locations for FY2024 were discussed. Although the dates and locations are listed, they remain tentative and are not official until posted in the Federal Register. Focus of each meeting to be determined.

- San Antonio, TX: February 12-13, 2024; Tampa Bay, FL as back-up location
- Denver, CO: August 20-22, 2024

Meeting adjourned.

Acronym List

Acronym	Name
AI	Artificial Intelligence
Alt-DFO	Alternate Designated Federal Officer
CBRN	chemical, biological, radiological, nuclear
CDC	Center for Disease Control and Prevention
COVID-19	Coronavirus Disease Of 2019
CPAP	Continuous Positive Airway Pressure
DARPA	Defense Advanced Research Projects Agency
DTRA	Defense Threat Reduction Agency
DFO	Designated Federal Officer
DNA	Deoxyribonucleic acid
DOD	Department of Defense
DODSR	Department of Defense Serum Repository
ECHO	Epigenetic Characterization and Observation
EHR	Electronic Health Record(s)
FACA	Federal Advisory Committee Act
FDA	Food and Drug Administration
GW	Gulf War
GWI	Gulf War Illness
GWV	Gulf War Veteran(s)
GW-MERIC	Gulf War-Military Exposure Research Innovation Center
HIPAA	Health Insurance Portability and Accountability Act
HOME	Health Outcomes Military Exposures
ICD-10	International Classification of Diseases, tenth revision
ILEAD	Institute for Learning, Education and Development
ILER	Individual Longitudinal Exposure Record
IN-DEPTH	VA-NIH Investigative Deep Phenotyping Study of Gulf War Veteran Health

IRB	Institutional Review Board
MERIC	Military Exposure Research Innovation Center
MERP	Military Exposures Research Program
MRSA	Methicillin-resistant Staphylococcus aureus
MSSA	Methicillin-sensitive Staphylococcus aureus
MVP	Million Veteran Program
NIH	National Institutes of Health
ORD	Office of Research and Development
OSA	Obstructive Sleep Apnea
PACT Act	The Sergeant First Class Heath Robinson Honoring our Promise to Address Comprehensive Toxics Act of 2022
QUERI	Quality Enhancement Research Initiative
RAC	Research Advisory Committee
RACGWVI	Research Advisory Committee on Gulf War Veterans' Illnesses
RFA	Request for Applications
SECVA	Secretary of the VA
SHIELD	Science and Health Initiative to Combat Infectious and Emerging Life-Threatening Diseases
U.S.	United States
VA	Veterans Affairs
VINCI	VA Informatics and Computing Infrastructure
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Networks
VAIRRS	VA Innovation and Research Review System
VBA	Veterans Benefit Administration
VCA	Veterans Care Agreement(s)
VEO	Veteran Experience Office
VES	Veteran Engagement Sessions
VHA	Veterans Health Administration
VINCI	VA Informatics and Computing Infrastructure
WRIISC	War Related Illness and Injury Study Center