

### **Committee Recommendation Categories:**

#### **Integrating research outcomes into clinical care and making the two services more collaborative and interactive**

- Recommend that the research and clinical sides of VA should collaborate more interactively.
- In addition to self-reported outcomes, researchers should obtain up-to-date results of veteran's physical evaluations from clinic visits.
- Recommend that all VA physicians be required to have GWI training to create some uniformity of care throughout the agency and uniformity of treatment for GW veterans.
- recommend that a mechanism for veterans to be able to easily contribute to research studies, such as biomarker studies, is needed (i.e. a system to obtain consent, blood collection, and processing done all at once be put in place at VA hospitals).
- Recommend that VA personnel should not utilize a misleading list stating inaccurately which units were exposed and which symptoms veterans should have. Recommend that VA caregivers recognize that all Gulf War veterans were potentially exposed to environmental toxins based on dates in country and that the symptoms of GWI vary amongst veterans. Once proof of service dates are shown, proper medical treatment should occur as soon as possible.

#### **Improving study methods for gene-exposure outcomes, case definitions, exposure group surveillance and categorization of groups by dates of service.**

- VA research service should form a working group to assist in the development of a single case definition for GWI and to review the assessment variables and outcome variables for GWI research.
- Recommend that the problematic categorization of deployed and non-deployed groups is corrected in large VA survey and cohort studies for deployed vs non-deployed veterans such that VA researchers identify and recognize that GW Desert Storm ended April 11, 1991, not March 1, 1991.
- Recommend performing an independent confirmation study of reported association of rare BChE variants associated with GWI in deployed veterans stratified based on their self-reported exposure histories; (2) the feasibility of sequencing the entire gene (both exons and introns), and extend this to other candidate genes (such as PON1, PON2, and PON3); (3) other repositories that can be used for this (i.e., including MVP or coupled with DOD serum repository);

(4) extending this strategy to ALS where rare PON variants are also associated with disease.

- Recommend that GW veterans with the closest proximity to Khamisiyah detonations (and highest risk of sarin exposure) are followed as a surveillance group, due to this group being at highest risk of brain cancer and perhaps other disorders.
- Revisit the notion that "all health problems of GWVs" need to be considered under GW research funding. Expanding the scope to encompass all health problems (including the many for which there are other sources of funding available) does an incalculable disservice to the many (~1/3) veterans who experience the health problems that led to this increased funding allocation for GWI.

#### **Develop larger treatment trials from prior promising pilot treatment studies**

- Recommend that VA conduct a follow-up study to the promising research outcomes of L-carnosine on IBS symptoms conducted by Baraniuk et al., (2013).
- Recommend that VA conduct a follow-up study to the pilot continuous positive airway pressure (CPAP) treatment trial with GW veterans conducted by Amin et al., (2011).