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WSU scientist contributes to U.S. report on the effects of the Gulf War on generational health

DETROIT -- Wayne State University School of Medicine reproductive medicine researcher Stephen Krawetz, Ph.D., is among the national experts from 16 institutions selected to serve a two-year term on a National Academies of Sciences Engineering and Medicine committee that prepared a comprehensive report on the reproductive effects of wartime exposures on Gulf War veterans and their children.

"Gulf War and Health, Volume 11: Generational Health Effects of Serving in the Gulf War" was published Nov. 28. A full copy is available at nationalacademies.org/GulfWarHealth11.

The report concludes that no toxicant had sufficient evidence of a causal association between exposure and reproductive or developmental effects. "Nor did any toxicant have limited/suggestive evidence of no association between exposure and reproductive or developmental effects," the report states.

However, Dr. Krawetz and his colleagues end the report by proposing and outlining a health monitoring and research program to help determine if veterans' descendants are at risk for health effects resulting from the veterans' deployment. The program would include the monitoring of veterans' and their descendants' health over time, epidemiologic studies to examine health outcomes of concern, and basic and translational research to help address data and knowledge gaps.

"Exposures across the life course, beginning in utero, can have an impact on health, including that of future children. Those exposures ... may interact with one another and be influenced by a person's genome and epigenome. Such changes are being studied, but at present there is not enough evidence to link any deployment exposures to epigenetic effects," the report concludes.

A reproductive medicine scientist, Dr. Krawetz is the associate director of WSU's C.S. Mott Center for Human Growth and Development, and the Charlotte B. Failing Professor of Fetal Therapy and Diagnosis in the Department of Obstetrics and Gynecology, and the Center for Molecular Medicine and Genetics.

Dr. Krawetz's committee colleagues included experts from the University of California at Berkeley, Harvard University's Dana-Farber Cancer Institute, Harvard T.H. Chan School of Public Health, Emory University, the University of Maryland and more, brought together to address a specific Statement of Task. Nearly 700,000 U.S. troops were deployed to the Persian Gulf region during the height of Operation Desert Shield and Operation Desert Storm. In any war, deployed service members may be exposed to hazardous agents and situations, including pesticides and solvents, chemical and biological agents, mandatory vaccines, oil-well smoke, dust, high ambient temperatures and heat stress, depleted uranium and pyridostigmine bromide, a prophylactic agent against nerve agent exposure.



The committee began its deliberations with public meetings to hear from VA representatives, academic researchers, interested veterans and veterans' service organizations. It also gathered information from the National Institute of Environmental Health Sciences and its National Toxicology Program, the U.S. Centers for Disease Control and Prevention, and the Department of Defense. Actual tasks were driven by the published literature and the committee's expertise.

In 1998, Congress directed the Department of Veterans Affairs to contract with the National Academies of Sciences, Engineering and Medicine to evaluate the scientific and medical literature regarding associations between illness and exposure to the toxic agents, environmental and wartime hazards, and preventive medicines and vaccines associated with Gulf War service. Since then, the National Academies has prepared 11 volumes of the Gulf War and Health series, focused on the health of Gulf War veterans. The latest assesses the available evidence on the reproductive systems of Gulf War and Post-9/11 conflicts, and provides guidance to VA on future research. The report also lists potential ways researchers may determine if there are health issues in the children or grandchildren of veterans of any era related to their parents' or grandparents' deployment exposures.

The National Academies of Science Engineering and Medicine is a Washington, D.C.-based independent organization that provides objective advice on issues affecting people's lives worldwide.

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