



Study of a National Cohort of Gulf War and Gulf Era Veterans

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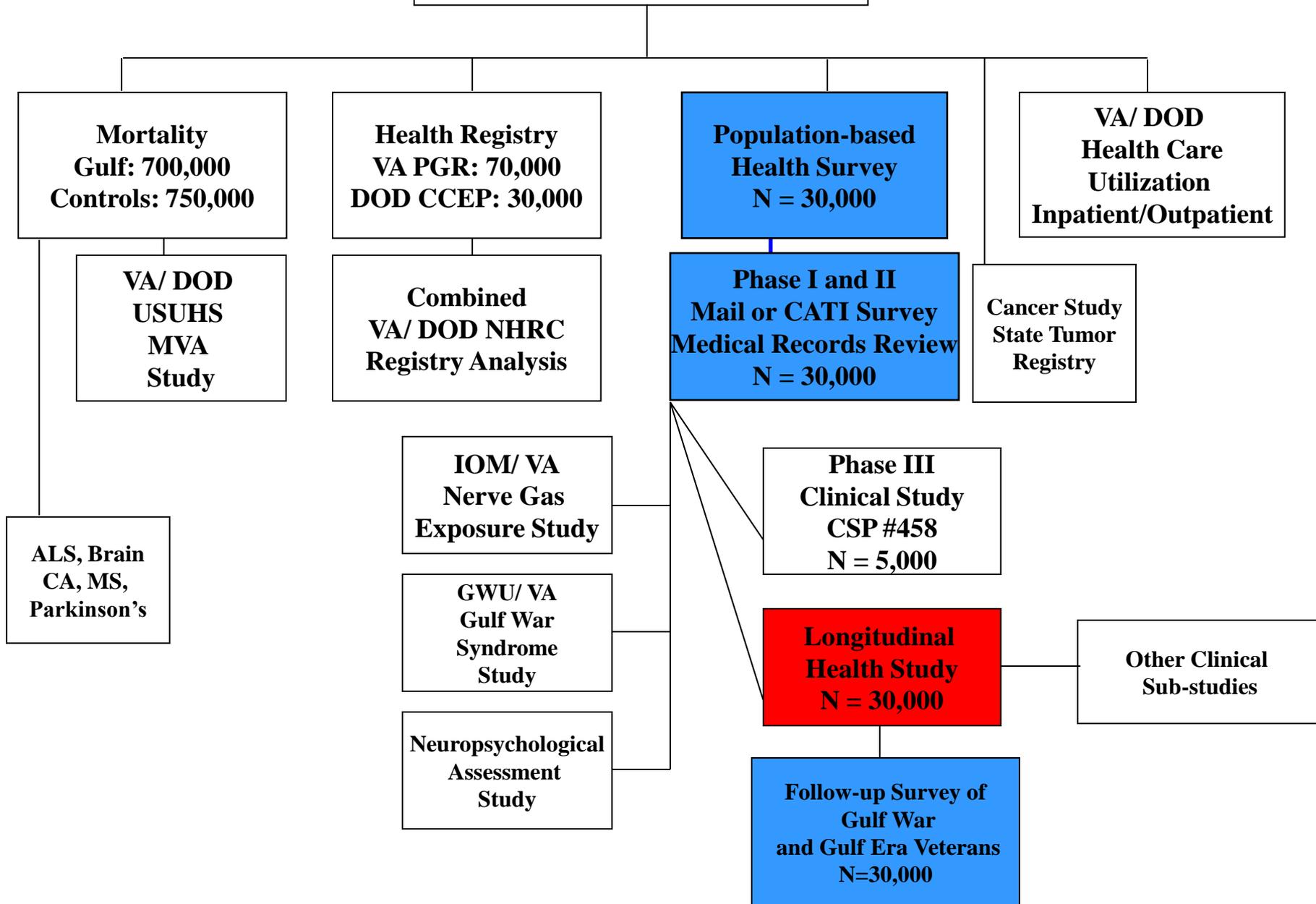
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Health Assessment Gulf War-Era Veterans





National Health Survey

1995-1997

- Population based sample of 30,000 Veterans were studied.
- Population-based sample of 15,000 Gulf War-deployed Veterans (Desert Shield/Desert Storm participants) -vs- 15,000 non-deployed, Gulf War-era Veterans.

**Distribution of
Gulf War Veterans and Non-Gulf War Veterans
in the survey by Gender and Unit Component**

Unit Component	Gender		Total
	Male	Female	
Active	4,800	1,200	6,000
Reserve	4,000	1,000	5,000
Guard	3,200	800	4,000
Total	12,000	3,000	15,000



National Health Survey Phase I and II Findings

I. Physical Health

Gulf War Veterans reported higher prevalence of:

- Functional impairment
- Health care utilization
- A wide variety of symptoms
- Serious chronic health conditions
- Lower perception of general health

National Health Survey Phase I and II Findings

II. Psychological Health

- Gulf War Veterans reported higher prevalence of symptoms associated with post-traumatic stress disorder (PTSD) (PCL-M) and chronic fatigue syndrome (CDC 1994)
- The prevalence of PTSD increased across 6 levels of deployment-related stress intensity (test for trend, $p < 0.01$)
- Gulf War Veterans reported higher rate of sexual trauma (harassment/assault) in theater, which in turn was associated with the higher prevalence of PTSD even after adjusting for the combat trauma.

National Health Survey Phase I and II Findings

III. Reproductive Health

Gulf War Veterans reported higher rates of:

- Miscarriage

Male Veterans*: OR=1.62; 95% CI=1.32-1.99

Female Veterans: OR = 1.35; 95% CI =0.97-1.89

- Birth defects among live-born infants

Male Veterans*: OR = 1.78; 95% CI=1.19-2.66

Female Veterans: OR= 2.80; 95% CI=1.26-6.25

*Reporting the experience of female partners



Longitudinal Health Study of Persian Gulf War Era Veterans

2003-2005

- Panel of 30,000 Gulf War and Gulf Era Veterans were re-contacted as part of this follow-up survey.
- 14 years after deployment, Gulf War Veterans continued to report a higher prevalence of many adverse health outcomes compared with Gulf Era Veterans.

(SOURCE: Kang et al. JOEM 2009;51:401-10.)



What's Next?

- 1) Longitudinal study of mortality from neurological diseases
- 2) Analyses of health care utilization in the NHS cohort
- 3) Follow-up Study of a National Cohort of Gulf War and Gulf Era Veterans



Gulf War Follow-Up Study 2011-2012

Objectives:

- To assess the health status of Veterans of the first Gulf War (1990-1991) by examining chronic medical conditions, post-traumatic stress disorder, general health perceptions, functional status, mortality, and health care utilization.
- To better understand the natural history of chronic fatigue syndrome (CFS), unexplained multi-symptom illnesses (MSI), and other health conditions 20 years post-deployment.



Gulf War Follow-Up Study 2011-2012

Specific Aims:

1. To determine if the current health status of Gulf War Veterans is better, worse, or the same as non-deployed Veterans.
2. To characterize the current health care utilization and VA disability compensation patterns of Gulf War Veterans.
3. To describe the natural histories of CFS-like illness, unexplained MSI, and other health conditions in these Veteran populations over time.



Gulf War Follow-Up Study 2011-2012

Study Design/Methodology:

- The study will involve 15,000 Gulf War Veterans and 15,000 non-deployed veterans.*
- This panel of Veterans was originally surveyed in 1995-1997 and again in 2003-2005.
- Comprised of a population-based sample of troops representing each branch of service, unit component (active duty, reserve, National Guard) and gender.

* The original study design included a 20 percent oversampling of women to ensure adequate representation.



Gulf War Follow-Up Study 2011-2012

Study Design/Methodology:

- A combination of mail and online surveys will be used to collect data.
- Selected self-reported health outcomes will be validated using existing medical records.
- A passive record-based follow-up will be conducted for mortality outcomes, assessment of health care utilization, and disability compensation using VA and other databases.



Gulf War Follow-Up Study 2011-2012

Questionnaires (mail, online):

- The questions on the surveys are drawn from a combination of standardized and validated instruments used to screen for the health conditions and risk factors of interest:
 - National Health and Nutrition Examination Survey
 - Behavioral Risk Factor Surveillance Study
 - Post-traumatic stress disorder 17-item checklist
 - PHQ-9 screening test for depression



Gulf War Follow-Up Study 2011-2012

Questionnaires (mail, online):

- Prior to the mailing of the questionnaire, a notification letter and a reminder letter will be sent.
- The questionnaire will be mailed with a cover letter and a one-page informed consent statement.



Gulf War Follow-Up Study 2011-2012

Questionnaires (mail, online):

Topics covered in Questionnaires include:

- Deployment history
- Employment status
- General feelings of well-being and functional status
- Utilization of VA health care and satisfaction with VA care
- Chronic health symptoms/conditions including CFS-like illness and unexplained MSI
- Psychological well-being and symptoms
- Womens' health



Gulf War Follow-Up Study 2011-2012

Questionnaires (mail, online):

Topics covered in Questionnaires include:

- Behavioral factors influencing illness and injury
 - tobacco use
 - alcohol consumption
 - alcohol-impaired driving
 - physical activity
 - risky sexual behavior



Gulf War Follow-Up Study 2011-2012

Questionnaires (mail, online):

Topics covered in Questionnaires include:

- Other symptoms and health conditions
- Womens' health topics
- Height and weight
- Sexually transmitted diseases
- Demographic characteristics, including education



Gulf War Follow-Up Study 2011-2012

Table 1. Sources of data

Research Objective	Mail, online, telephone questionnaires: origins of some (not all) questions					Review of Civilian Medical Records	Review of VA Hosp / Outpt Computer & Medical Data	VA C&P File ⁴
	BIRLS FRC NDI ¹	Natn'l Hlth Survey Q ²	PHQ ³	PTSD 17-item checklist	SF-12			
A.1. Mortality	✓							
A.2. Health Care Utilization		✓				✓	✓	
A.3. Chronic Medical Conditions		✓				✓	✓	
A.4. Current PTSD				✓		✓	✓	
A.5. General Health		✓	✓		✓	✓	✓	
A 6. VA Disability Compensation								✓

Data are also being collected for the following potential major confounding variables: socio-demographic characteristics, weight, height, body habitus, and cigarette and alcohol consumption.

¹ BIRLS = Beneficiary Identification Records Locator Subsystem; FRS = Federal Records Center; NDI = National Death Index

² National Health Survey Questionnaire

³ Patient Health Questionnaire: alcohol abuse/dependence, depression, somatization, and anxiety disorders

⁴ VA Compensation and Pension File



Gulf War Follow-Up Study 2011-2012

Relevance:

The Gulf War Follow-Up Study will allow VA to:

- Improve the understanding of the long-term consequences of military deployment.
- Improve the understanding of the natural history of chronic conditions such as CFS-like illness and unexplained MSI.
- Plan and provide better health care for Veterans.