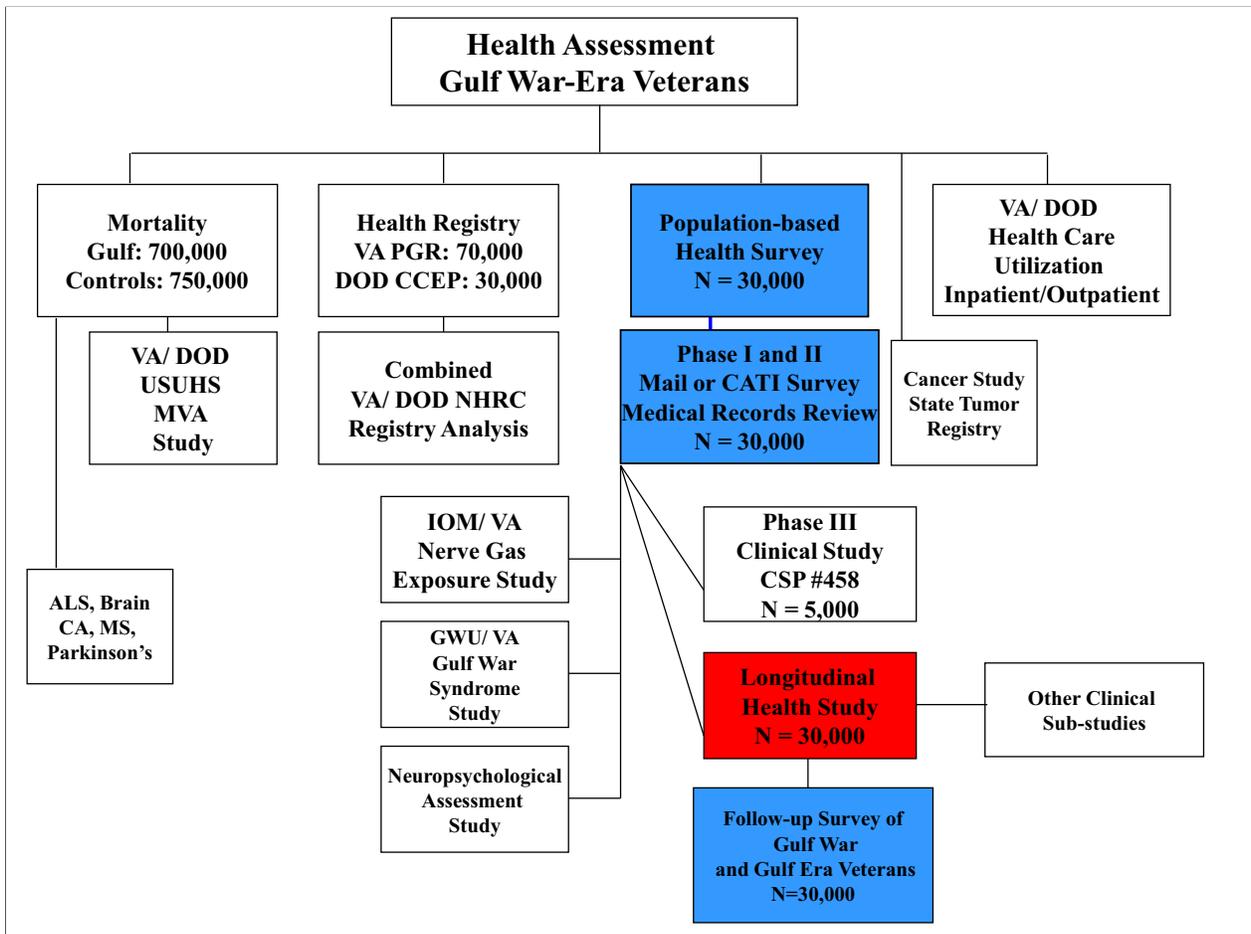




Study of a National Cohort of Gulf War and Gulf Era Veterans

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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 4. 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.