


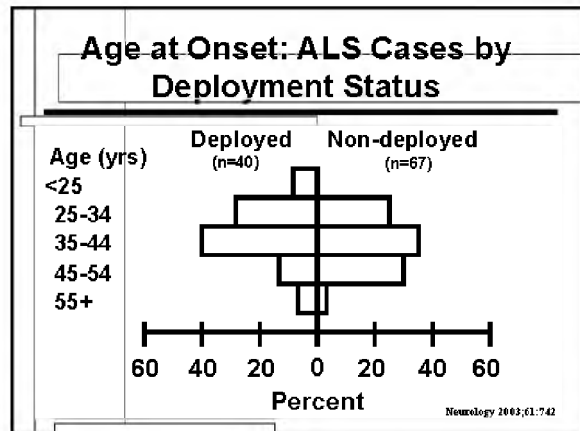
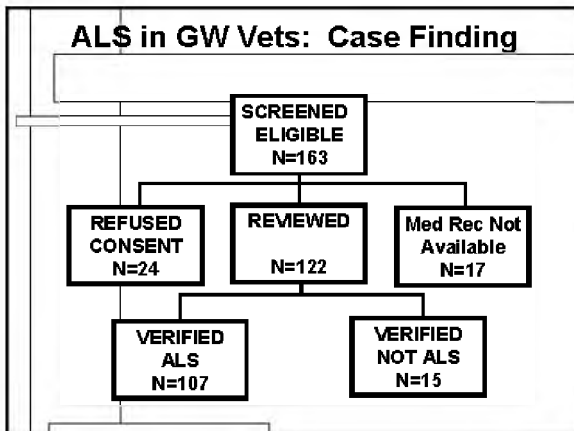
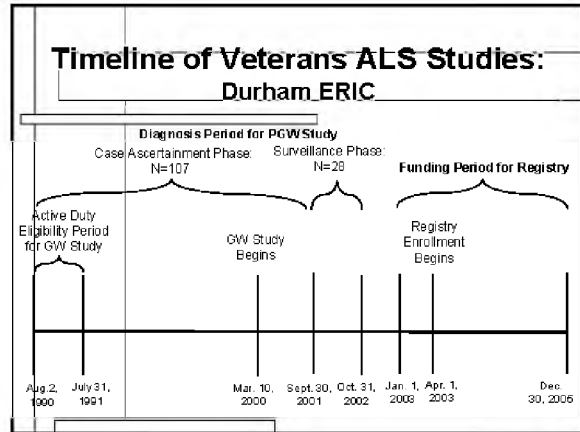
Presentation 11 – Eugene Oddone

Occurrence of Amyotrophic Lateral Sclerosis (ALS) Among Gulf War Veterans (CSP#500)
National Registry of Veterans with ALS (CSP#500A)

Funded by the Department of Defense, and Office of Research and Development, Cooperative Studies Program, Department of Veterans Affairs
Eugene Oddone, MD, MHSc; R. Horner (original PI)

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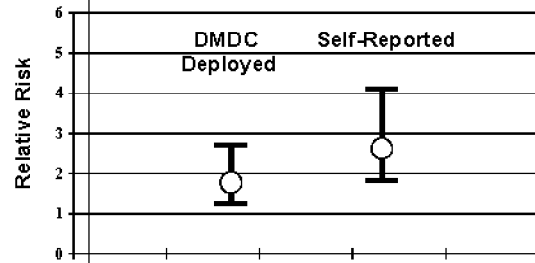


Age-Specific Rates (per 100,000) of ALS by Deployment Status

Age at Onset	Men, W. WA State	Non-deployed (n=67)	Deployed (n=40)
<25	0.11	0.00	0.08
25-34	0.79	0.26	0.45
35-44	1.63	0.80	1.77
45-54	2.49	4.81	5.64
55-64	6.42	8.89	31.19

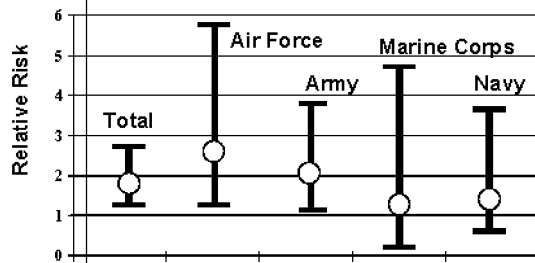
Neurology 2003;61:742

ALS in GW Vets: Adjusted Relative Risk of ALS



Neurology 2003;61:742

ALS in GW Vets: Branch-Specific Adjusted Relative Risks of ALS DMDC Deployment



Neurology 2003;61:742

ALS in GW Vets: Surveillance Update

- 28 verified ALS cases
 - DMDC Status: 10 Deployed, 18 Non-deployed
 - Self-Report Status: 14 Deployed, 14 Non-deployed
 - Reanalysis did not alter original RR
 - Ongoing analyses of age-adjusted and branch-specific rates

ALS in GW Vets: Estimates of Under-Ascertainment of ALS Cases

- Capture-recapture methodology applied to estimate under-ascertainment among deployed and non-deployed personnel
- ⇒ Evidence for differential undercount
 - modest under-ascertainment among non-deployed
 - little under-ascertainment among deployed
- ⇒ Age-adjusted risk of ALS among deployed remains elevated after correcting rates for under-ascertainment

ALS in GW Vets: Summary of Exposure and Biological Data

- **DNA:** Analyzed at Lexington, KY VAMC, Edward Kasarskis, MD, Ph.D.
- **In-home interview of exposures** (occupational, health, chemical, food): Oregon Health & Science University, Peter Spencer, Ph.D.
- **Oil well fire exposure:** Army Center for Health Promotion and Preventive Medicine, Jack Heller, Ph.D.
- **Blood and urine heavy metals:** Centers for Disease Control & Prevention, Drue Barrett, Ph.D.

ALS in GW Vets : Planned Manuscripts

- Clinical description of cases
- Capture/recapture (under-ascertainment of cases)
- Oil well fire exposure and GIS analysis among deployed veterans
- Incubation period/epidemic curve
- Methodological challenges of investigating a rare disease
- Blood and urine heavy metal analyses

National Registry of Veterans with ALS (CSP #500A)

Funded by the Office of Research and Development, Cooperative Studies Program, Department of Veterans Affairs

Eugene Z. Oddone, M.D., M.HSc.
Edward J. Kasarskis, M.D., Ph.D.

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ALS Registry Objectives

- **Identify all living veterans with a diagnosis of ALS and track their health status**
- **Include veterans in ALS-related research**
 - Clinical drug (or other interventional) trials
 - Epidemiological studies
 - Genetic studies (DNA component pending approval)

Scientific Review Committee: Veterans ALS Registry

John Booss, MD National Director of Neurology Department of Veterans Affairs	Kimberly A. Gray, PhD Health Scientist Administrator NIEHS
Robert H. Brown, Jr., MD, D.Phil Director, Day Neuromuscular Research Laboratory Massachusetts General Hospital	Philip W. Lavori, PhD Acting Director, Cooperative Studies Program Director, DNA Coordinating Center Department of Veteran Affairs
Lucie Buijn, PhD Science Director and Vice President ALS Association	Hiroshi Mitsumoto, MD Director, Eleanor and Lou Gehrig MDA/ALS Center Columbia Presbyterian Medical Center
Louis D. Fiore, MD, MPH Co-Director, Massachusetts Veterans Epidemiologic Research and Information Center Department of Veterans Affairs	Lorene Nelson, PhD Associate Professor of Health Research and Policy Stanford University
Ronnie D. Homer, PhD Program Director Health Disparities Research NINDS	Margaret Pericak-Vance, PhD Director, Center for Human Genetics Duke University Medical Center

Identification of Cases Veterans ALS Registry

- **Previously identified Gulf War veterans**
- **Extant VA databases: Inpatient Treatment File (PTF), Outpatient Clinic File (OPC)**
 - Based on ICD-9 code for ALS (335.20)
- **Referrals from Veterans Benefits Administration**
- **Ongoing nation-wide solicitation of cases**
 - ALS Association, VA Neurology Service, Veterans Service Organizations, American Academy of Neurology

Screening and Case Verification Veterans ALS Registry

- **Initial telephone screening to ascertain veteran status and self-report of ALS diagnosis (Durham ERIC)**
- **Consent, medical record release, and physician contact forms mailed following telephone screening**
- **Medical records obtained and reviewed by expert neurologists (Lexington and Durham)**

Baseline and Follow-Up Interviews Veterans ALS Registry

- **Baseline Interview: following medical record verification of ALS**
 - ALS Functional Rating Scale
 - Military and Occupational History
 - Medication List
- **Follow-up interviews: every six months**
 - ALS Functional Rating Scale
 - Medication List
 - Use of feeding tube and ventilation assistance

Current Status Veterans ALS Registry

- **658 Screened by Phone/Web: 552 Eligible**
- **80 of 552 (15%) Verified ALS: Enrolled**
- **472 in process of verification**
- **Additional 770 individuals have been identified in VA databases, screening is ongoing**

Gulf War Veteran Participants Veterans ALS Registry

- **58 veterans from Gulf War ALS study currently enrolled in Registry**
 - 90% of living/ found veterans from original
- **Additional 21 veterans have screened eligible for the Registry and also reported being deployed to the Gulf during the Gulf War period**
 - Note: These cases not yet verified by medical record review, and deployment status has not been confirmed by military records (self-report only)

Data Access Procedures Veterans ALS Registry

- **VA and non-VA investigators may request access to data from Registry via a brief Statement of Research Intent**
- **If approved by the Registry, investigators will submit a complete proposal**
- **The Scientific Review Committee will review all proposals and make recommendations for acceptance**

DNA Banking Veterans ALS Registry

- **Gene and gene x environment interactions may be one of the most promising areas for research on etiology of ALS**
- **Registry Scientific Review Committee supported addition of DNA banking**
- **Proposal for DNA banking has been submitted to VA Cooperative Studies Program DNA Coordinating Committee and is currently under review**

Proposed Projects Using Registry Data

- **Addition of control subjects to Registry, including control DNA**
 - NIEHS Grant Submission
- **Case control study of gene and gene x environment interactions in ALS**
 - NINDS and NIEHS Grant Submission
- **Identification of biomarkers of ALS onset and progression**
 - NINDS Grant Submission
- **Identification of metabolic signatures in ALS**
 - NINDS Grant Submission