

AD \_\_\_\_\_

Award Number: W81XWH-~~€JFFI~~ | €

TITLE: V@ÁE•[ &ãã } Á^ç ^^} ÁÛ ãã^Áã) áÁÙÒØÙÙÁ^] [[ ^{ ^} óPã q !^

PRINCIPAL INVESTIGATOR: ÖiÁT æ\ ÁÛ^\*^!

CONTRACTING ORGANIZATION: V@ÁÖ^}^çãÙ ~} áãã }  
Šã^, [[ áÁÙÙÙ | JJÁ

REPORT DATE: Ö \* ^ • ÁE FF

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release; distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

<b>1. REPORT DATE (DD-MM-YYYY)</b> 01-08-2011		<b>2. REPORT TYPE</b> Annual		<b>3. DATES COVERED (From - To)</b> 23 JUL 2010 - 22 JUL 2011	
<b>4. TITLE AND SUBTITLE</b> The Association Between Suicide and OEF/OIF Deployment History				<b>5a. CONTRACT NUMBER</b>	
				<b>5b. GRANT NUMBER</b> W81XWH-09-1-0540	
				<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> Dr. Mark Reger  E-Mail: mark.reger@us.army.mil				<b>5d. PROJECT NUMBER</b>	
				<b>5e. TASK NUMBER</b>	
				<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> The Geneva Foundation Lakewood, WA 98499				<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012				<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>	
				<b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>	
<b>12. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for Public Release; Distribution Unlimited					
<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b> Abstract on next page.					
<b>15. SUBJECT TERMS</b> Suicide, Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF)					
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>  UU	<b>18. NUMBER OF PAGES</b>  8	<b>19a. NAME OF RESPONSIBLE PERSON</b> USAMRMC
<b>a. REPORT</b> U	<b>b. ABSTRACT</b> U	<b>c. THIS PAGE</b> U			<b>19b. TELEPHONE NUMBER (include area code)</b>

#### **14. ABSTRACT**

One of the most important questions in military suicide research at this time is whether deployment in support of Operations Iraqi or Enduring Freedom (OIF/OEF) is associated with an increased risk of suicide. The equivocal research conducted to date on this topic creates a confusing picture for military senior leaders and the American public. The Report of the Blue Ribbon Workgroup on Suicide Prevention in the Veteran Population (Peake, 2008) reviewed this body of literature and concluded that significant limitations and biases in many of the epidemiological approaches conducted to date contribute to the current confusion. The funded study is specifically designed to address many of the recommendations of that report in order to generate seminal results that will fill what is arguably the most important gap in the epidemiological study of military suicide. This collaborative DoD-VA study will utilize multiple enterprise level databases to determine whether a history of deployment in support of OIF/OEF is a risk factor for suicide. In addition, the proposed study will examine the suicide rates of post-deployed National Guard members and Reservists to determine whether these cohorts are at increased risk of suicide. Furthermore, it will examine rates of deaths of undetermined intent in military and civilian populations to determine whether potential misclassifications of deaths may confound military and civilian comparisons of suicide rates. In examining these suicide rates, the funded study will also specifically account for the potential confounding effect of service members who have not completed a full term of service (e.g., because of misconduct, substance abuse, etc.) and thus may be more likely to have risk factors for suicide.

## Table of Contents

	<u>Page</u>
Introduction.....	4
Body.....	4
Key Research Accomplishments.....	6
Reportable Outcomes.....	7
Conclusion.....	7
References.....	7
Appendices.....	7

## **INTRODUCTION**

One of the most important questions in military suicide research at this time is whether deployment in support of Operations Iraqi or Enduring Freedom (OIF/OEF) is associated with an increased risk of suicide. The equivocal research conducted to date on this topic creates a confusing picture for military senior leaders and the American public. The Report of the Blue Ribbon Workgroup on Suicide Prevention in the Veteran Population (Peake, 2008) reviewed this body of literature and concluded that significant limitations and biases in many of the epidemiological approaches conducted to date contribute to the current confusion. The funded study is specifically designed to address many of the recommendations of that report in order to generate seminal results that will fill what is arguably the most important gap in the epidemiological study of military suicide. This collaborative Department of Defense (DoD) – Veterans Affairs (VA) study will utilize multiple enterprise level databases to determine whether a history of deployment in support of OIF/OEF is a risk factor for suicide. In addition, the proposed study will examine the suicide rates of post-deployed National Guard members and Reservists to determine whether these cohorts are at increased risk of suicide. Furthermore, it will examine rates of deaths of undetermined intent in military and civilian populations to determine whether potential misclassifications of deaths may confound military and civilian comparisons of suicide rates. In examining these suicide rates, the funded study will also specifically account for the potential confounding effect of service members who have not completed a full term of service (e.g., because of misconduct, substance abuse, etc.) and thus may be more likely to have risk factors for suicide.

## **BODY**

The Madigan Army Medical Center (MAMC) Institutional Review Board (IRB) granted continuing review of the research protocol on December 16, 2010. The Human Research Protection Office (HRPO) IRB subsequently granted continuing review on January 10, 2011 and the Department of Veterans Affairs (VA) IRB granted continuing review on February 18, 2011. All other regulatory documentation has been previously approved in accordance with the granting agency. A Biostatistician has been interviewed and a consulting offer has been extended for the grant. The selected candidate has consequently accepted the consulting position.

Over the course of the second year, the T2 study team has agreed upon and signed a Memorandum of Understanding (MOU) with the Defense Manpower Data Center (DMDC) and Centers for Disease Control's (CDC) National Death Index (NDI) Program. The MOU went into effect March 1, 2011. Additionally, the DMDC has been incorporated into the CDC's NDI application to format and submit data on T2's behalf. As per the MOU, T2 will not receive personally identifiable information (PII) for any service member known to be alive. T2 will subsequently retain PII for all service members who are confirmed deceased. As a result, T2 will assess the matched NDI results with limited identifiers to preserve the identity of the presumed alive population.

The DMDC has designated a DMDC file manager to the T2 data request to assist in compiling the data to be sent to the NDI. The initial DMDC data pull will be comprised of only PII of all Service Members who have served in the military during calendar years (CY) 2001-2007. Consequently, the DMDC has sent two datasets to the NDI for matching. The first dataset includes all service members who have been confirmed deceased verified by the DMDC's Casualty file and Defense Casualty Information Processing System's (DCIP) file, as well as the Social Security Administration's (SSA) – Death Master File (DMF). The "Known Decedent" dataset contains approximately 42,000 individual records. The second dataset includes all service members presumed alive, through January 2011, containing roughly 4.2 million records. The NDI will perform matching procedures when 2009 decedent records are released from the CDC in August 2011. The funding agency has completed payment to the CDC's NDI program for their services in the amount of \$1,156,046.00.

Provided that the DMDC will retain PII on all service members known to be alive, T2 will perform quality control (QC) assessments of decedent data using the current SSA-DMF. Therefore, T2 has purchased the most current SSA-DMF to assist in this effort. The database administrator has spent a considerable amount of time developing and preparing the database in preparation to receive data from both the DMDC and NDI. The NDI has sent sample data to test loading and analysis procedures to ensure a smooth process once data is received. The Statistical Analysis Software (SAS) program has been purchased and installed to analyze matched results. A data linkage tool has been researched and tested using sample data to show differences in data values. The database server has been updated to conform to current DoD standards.

As of the end of the reporting period, no data has been received due to the delay in the CDC's release of 2009 NDI data. However, T2 has met extensively with our VA collaborators and other researchers familiar with using both DMDC and NDI data to ensure all variables are being captured and to discuss potential complications combining multiple enterprise level data sources. In addition, one of the goals of the grant is to transition this project to a DoD resource that can be updated in the future. The PI is the DoD Lead for the VA/DoD Suicide Nomenclature and Data Working Group. This Workgroup reports directly to the Joint Executive Council (JEC; Co-Chaired by USDP&R). The JEC has asked the Workgroup to develop an implementation plan and cost estimate for a joint DoD-VA suicide repository that includes NDI data. The PI was able to present our study methods and lessons learned from this grant to the Workgroup as a model to consider, and potentially a foundation to build from. The JEC will consider the proposal in the Fall of 2011.

### *Modifications*

The research protocol was modified to include the database manager, and increase the number of NDI years searched. This will allow the CY 2001-2007 cohort to be searched through 2009, the most recent death data available through the NDI program.

## *Challenges*

A longer than anticipated time period to receive data from both the DMDC and CDC's NDI program was encountered. With this said, the CDC is scheduled to run T2 data when 2009 data is received from the states in August 2011.

The Research team will work to maximize data quality control procedures. Mechanisms required to load data into the T2 database continue to progress to ensure that the data, as delivered to T2 by the DMDC, is loaded accurately into the database. In addition, the data flow from DMDC to CDC, back to DMDC, and finally to T2 is a bit convoluted and creates some challenges to ensure data quality. Specifically, the DMDC will send the requested data (which includes decedents and non-decedents comprising all service members for the 2001-2007 time period following through 2009) to the NDI. The NDI will perform the data matching procedure to ascertain cause of death and return the results to the DMDC. The DMDC will deliver to T2 the resulting NDI matches, including the PII for decedents and de-identified data of the non-decedent records. T2 will work to ensure that the de-identified data has not been transformed or encountered other linkage problems along the way.

## **KEY RESEARCH ACCOMPLISHMENTS**

### *Administrative and Logistical Matters*

1. Personnel
  - a. Recruitment, interviewing and hiring a statistical consultant with an anticipated start date of September 2011.
2. Equipment
  - a. SAS program purchased, tested and installed in preparation for analysis.
3. Materials, supplies and consumables
  - a. Materials and required supplies continue to be coordinated in anticipation for data.
  - b. NDI data has been purchased while we are awaiting the release of 2009 data in August 2011.
4. Institutional Review Board (IRB)
  - a. MAMC IRB continuing review approved on December 16, 2010.
  - b. HRPO IRB continuing review approved on January 10, 2011.
  - c. VA IRB continuing review approved on February 18, 2011.

**REPORTABLE OUTCOMES**

None

**CONCLUSION**

None

**REFERENCES**

Peake, J. B. (2008). The Blue Ribbon Work Group of Suicide Prevention in the Veteran Population. Chartered by Secretary of Veterans Affairs James B. Peake, May 5, 2008.

**APPENDICIES**

None