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TITLE: Implement Family Member Assessment Component in the Millennium Cohort Study

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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.
This project focuses on examination of the impact of service member deployment to a war zone on the service member’s family, and is being conducted in collaboration with the Millennium Cohort Study (MilCo) team. As part of MilCo Panel 4, which will enroll about 62,000 new participants in 2011, a probability sample of married MilCo enrollees will be asked for contact information for their spouse, who will then be contacted and invited to participate in the MilCo Family Cohort (FamCo). Spouses who consent will complete a ~45-minute, internet-based assessment focused on spouse’s perception of: deployment stressors; health and mental health status of family members; and quality of family interpersonal relationships. During FamCo Year 1: the FamCo team worked with the MilCo team to develop the FamCo study design, spouse assessment, and data analysis and report plans; the MilCo team received IRB approval of the FamCo assessment and data collection protocol; and the MilCo team submitted an OMB Supporting Statement, which as of 29 October 2010 has not yet been approved.
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Introduction

The Family Cohort (FamCo) project’s primary objective is to examine empirically the impact of deployment to OEF/OIF on the families of US service members. The study is being conducted in collaboration with the Millennium Cohort Study (MilCo), and will be implemented by adding a family member assessment component to MilCo’s Panel 4. Panel 4 will be launched in 2010, and will enroll about 62,000 new participants in MilCo. FamCo will select a probability sample of Panel 4 participants who report in their MilCo baseline assessment that they are married, and ask them to provide contact information—including e-mail address—for their spouse. The FamCo sample will be selected to produce about 10,000 spouse participants, of which about half will be married to a service member who has been deployed to OEF/OIF at least once, and the other half will be married to a service member who has not (yet) been deployed to either of those conflicts. The baseline assessment for FamCo focuses on spouses’ perceptions of: deployment stressors for family members; health and mental health status of family members; and quality of family interpersonal relationships. Additional relevant information (e.g., health and mental health service utilization) will be drawn from military records.

Body

The FamCo project was purposefully implemented as a collaborative effort of the FamCo team and the MilCo team, with separate funding streams. All of the tasks necessary to implement the study are being conducted collaboratively, but leadership varies across the tasks. Tasks that involve the logistics of the survey (e.g., sample selection, survey implementation, survey data management) are led by the MilCo team with input and support from FamCo, and tasks that include the substance of and constructs covered by the survey, and the analysis and interpretation of FamCo data, are led by the FamCo team, with input and support from MilCo. Additionally, the MilCo team added a new member (Dr. Hope McMaster) to their staff who coordinates and manages FamCo efforts by the MilCo team. Communication between the teams has been facilitated by a weekly conference call, in which we discuss progress and issues from the current work and plans for upcoming tasks.

The FamCo project’s Scope of Work for the first year of this 4-year effort, as described in the FamCo application, was focused on preparing for the launch of FamCo in MilCo’s Panel 4 (e.g., finalizing baseline spouse assessment, obtaining IRB and OMB approvals, conducting pilot study of feasibility). The teams started the joint efforts by creating a draft of the spouse assessment. In doing so, we purposefully focused on consistency of measures with those being used in the MilCo service member assessment (e.g., for health and mental health constructs assessed in both studies, we opted for the measure that is included in the MilCo baseline assessment unless there was a compelling reason not to do so).

As is typically the case, our first draft of the assessment included measures of many constructs, and was quite long. Mindful of participant burden and of findings from the survey literature documenting that for paper-and-pencil surveys and internet surveys, about 45 minutes of administration time is the limit—surveys longer than that produce significantly lower participation
rates and lower data quality among those who do participate. Therefore, we discussed construct priorities and used them to reduce survey length. Because the FamCo study is intended to be longitudinal, we also discussed the use of a planned missingness design, in which about two-thirds of the assessment time (i.e., ~30 minutes) of assessment time would be devoted to constructs that would are included in every wave FamCo assessment, with primary health and mental health outcomes and relationship quality measures having top priority. Because at present little is known about moderators and mediators of the relationships between warzone deployment and FamCo’s primary outcomes, the other 15 minutes could rotate inclusion of hypothesized moderators and mediators over time. Because the FamCo samples are large, use of this strategy will produce a larger informational return on investment than would a static assessment plan (all measures repeated in each wave of assessment).

When the collaborators agreed on the assessment, the MilCo team submitted the proposed FamCo baseline assessment for review and approval by the NHRC IRB and by OMB. The submitted assessment included questions for the spouse about health and mental health symptoms experienced by each child (under age 18) who lived in with the service member and spouse. We chose parent report of child symptoms because of the substantial logistical problems associated with assessing children directly (e.g., establishing informed consent, the need for different questions for developmental subgroups). The NHRC IRB ruled that if the children are identifiable, they must be considered study subjects and be fully consented. This unusual interpretation of the regulations required the team to change substantially the FamCo assessment of children, but with these and other requested changes the NHRC IRB approved the protocol.

The OMB review process, however, continues. Because OMB clearance is a two-stage process, the pace of review can vary substantially from protocol to protocol (i.e., each Federal agency has an OMB Clearance Desk Officer who is responsible for overseeing the internal review of all submissions by the agency of Supporting Statements to OMB for clearance, and the within-agency review process is typically much more time-consuming than OMB’s review of the agency-approved product). At the end of the FamCo study’s first year, and still one month later, OMB has not reviewed the FamCo submission.

As the months in Year 1 went by without an OMB ruling, the FamCo team decided to delay any aspects of our SOW that could be influenced substantially by OMB’s ultimate ruling. Our reasoning for doing so included that [a] we did not want to waste time and other resources developing materials (e.g., protocols, data analysis plans) that don’t fit with what OMB approves, and [b] we don’t want to have already spent resources that will be needed to respond to what OMB approves. Therefore our actual level of effort for much of Year 1 was substantially less than anticipated, so we have substantial resources to carry over into Year 2, when we now expect to do much of what we had planned to do in Year 1.

In addition to the FamCo team’s change in plans, the MilCo team also made important changes in plans. First, due to findings from MilCo’s Panels 1-3 and the significant difference in mode costs, the MilCo team decided to drop the mailed pencil-and-paper response mode for Panel 4, including FamCo. Second, MilCo’s planned Panel 4 pilot study has been re-conceptualized from
A pilot study to “run-in.” In the run-in approach, common in community-based clinical trials, information based on the experiences of the initial set of participants enrolled (e.g., 10% or less of intended enrollment) is evaluated to determine if procedures are working as intended. If so, the effort is continued as planned. If not, appropriate changes are made to the protocol to remediate identified problems and the study is continued, and if the change(s) are substantial, participants in the run-in phase are deleted from the study files.

Although we did cut back our effort, particularly as the months passed without clearance, the FamCo team did continue work unlikely to be heavily effected by OMB’s decision. We supported MilCo in the development of the FamCo website (on which the participants will respond). We also participated in the selection of a FamCo Scientific Review Panel, the planning of agenda for the Panel’s first meeting, and we participated in the meeting. We also began identification of specific manuscripts that will be produced from the survey findings, and a plan for examining FamCo non-response and correcting any resulting bias using propensity analysis.

Additionally, over the first year we took advantage of opportunities to make presentations about FamCo. We made these presentations for at least two reasons: [1] to inform the field about our plans for the study and the kinds of information that it will produce, and [2] to inform diverse groups of peers in the field of our thinking about the design and implementation plans for the study, and engage them in dialog that might enhance our thinking about various aspects of the study. Across the year we made presentations at the following meetings/conferences (slides for these presentations are included in the appendix):

- The Brain at War, New York, NY, 2-19-2010
- MOMRP Family Research Review, Frederick, MD, 7-21-2010
- Force Health Protection, Phoenix, AZ, 8-2010
- Congressional Black Caucus, Washington, DC, 9-14-2010
- FamCo Scientific Review Panel Meeting, San Diego, CA, 9-21-2010

**Key Research Accomplishments**

- Created Spouse Assessment Protocol for the FamCo Spouse Assessment
- Received approval for FamCo Spouse Assessment Survey as a component of MilCo
- Sharpened the FamCo design in response to MilCo changes
- Made presentations on FamCo at five professional meetings
Reportable Outcomes
N/A

Conclusion
N/A

References
N/A

Appendices

- The Brain at War, New York, NY, 2-19-2010
- MOMRP Family Research Review, Frederick, MD, 7-21-2010
- Force Health Protection, Phoenix, AZ, 8-2010
- Congressional Black Caucus, Washington, DC, 9-14-2010
- FamCo Scientific Review Panel Meeting, San Diego, CA, 9-21-2010
APPENDICES
The Brain at War

New York, NY, 2-19-2010
Millennium Cohort Family Study

John Fairbank, PhD, Duke University
Charles Marmar, MD, New York University
William Schlenger, PhD, Abt Associates Inc.
Tyler Smith, MS, PhD, Naval Health Research Center
Background

- Few epidemiologic studies have examined the impact of deployment on family members and family functioning.
- Family relationships can be a source of support or stress for service members.
- The Millennium Cohort Study has enrolled more than 151,000 members since 2001. Members are surveyed every 3 years to understand the health effects of military service.
- A family cohort will be added to the 2010 Millennium Cohort enrollment cycle to assess the interrelated health effects of military service and deployment on service members, spouses, and co-resident children.
- Family survey will include topics such as impact of deployment and military service on spouse and family, services received, family cohesion, and behavior and development of children.
Objectives

- Answer important health related questions about military service members and their families in the context of military deployment and other occupational exposures

- Assess the association of family support and other factors with health outcomes
62,500 estimated to enroll in the Millennium Cohort Study 2010 enrollment

~50% married (by design) (n ~ 31,250)

65% estimated to give permission to contact spouse (n ~ 20,312)

50% estimated to respond resulting in ~10,156 spouses enrolling in the Family Cohort Study
Methodology

- 1% sample pilot testing

- Married service members will be asked to grant permission to contact spouse

- Target: Enroll ~10,000 spouses
  - Estimated half of spouses’ service member will have been deployed to OIF/OEF at least once

- Link to other military data to complement subjective measures with objective measures of exposures and health outcomes
Methodology

- Questionnaire includes widely used screening instruments (PHQ, PCL, SF-36V, CAGE, FACES IV, ISI, others)

- Includes measures of physical health, behavioral health, mental health, and family functioning

- Includes important exposure questions and other metrics (CAM use, sleep, etc.)

- Participants can respond via secure website: www.familycohort.org
Partnering Organizations and Co-Principal Investigators

- DoD funding via Military Operational Medicine Research Program (MOMRP), administered by USAMRMC

- Cooperative Research and Development Agreement (CRADA) between NHRC and Abt Associates, Inc.

- Co-Principal Investigators:
  - John Fairbank, PhD, Duke University
  - Charles Marmar, MD, New York University
  - William Schlenger, Abt Associates and Duke University
  - Tyler Smith, MS, PhD, Naval Health Research Center
Important Partners

- Defense Manpower Data Center
- Henry M. Jackson Foundation
- Anderson Direct Mailing Company
- Others
### Main Survey Topics

- Demographic information
- General health (including sleep)
- Spouse, family, child, and service member stress
- Impact of deployment and military service
- Family cohesion, expressiveness, and conflict
- Child behavioral, developmental, and general health
- Health service use
- Alcohol and tobacco use
- Military specific questions for active-duty spouses

### Measured Health Outcomes and Impact

Research will facilitate identification of specific interventions:

- Deployment-related stress
- Family member resilience
- Family support dynamics
- Service member and family well-being
- Force readiness
Future Direction

- In 2010, the Millennium Cohort Family Study is projected to launch and enroll spouses of military service members.

- By 2012, data collected from the Millennium Cohort Family Study would provide strategic information for DoD leadership.

- Securing funding for this longitudinal study is essential to better understand the long-term effects of military service on military member and family health.
Acknowledgments

**Millennium Cohort Study Co-Investigators**

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We are indebted to the Millennium Cohort Study members for their continued participation!
Millennium Cohort Family Study

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Co-PI: Charles Marmar, MD, New York University

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Co-I: Hope McMaster, PhD, Naval Health Research Center
Administrative Information

- Award Number: W81XWH-09-C-0101
- Award Date: 28 Sep 2009
- Award Amount: $9,850,873
- COR: MAJ Pedro Bonilla-Vazquez
- Project Officer: Ms. Buffy Burdette
- Portfolio Mgrs: COL Carl Castro, PhD, & Kate Nassauer, PhD.
Substantial empirical documentation of mental health and related outcomes for US service members deployed to war-zones

Less is known about deployment-related outcomes for spouses and other family members of US service personnel

War-zone deployment can be understood as representing an extreme case of work-family conflict resulting in degraded individual and family functioning:

* extended geographic separation
* constant threat of bodily harm
* anxiety and mood changes
* substance abuse and related problems
* service member concern over events at home
Study Background and Rationale

- DoD’s Mental Health Task Force recommendations:
  - Research on the processes of post-deployment adjustment for family members
  - Research on children who have been separated from their parents by deployment, including their access to support for psychological health issues

- A recent gap analysis by the Military Operational Medicine Research Program (MOMRP) identified studies of military families as a high priority issue
OEF/OIF Family Impact Study: Leveraging Existing Efforts

- So, we are conducting a community epidemiologic study of the impact of OEF/OIF deployment on family members

- For practical reasons, the study is:
  - being implemented in the context of the Millennium Cohort Study
  - focused primarily on spouses and secondarily on co-resident children
  - funded only for the baseline assessment, but designed and intended to be longitudinal
The Millennium Cohort Study was launched in 2001 in collaboration with all US military services and the Department of Veterans Affairs, prior to the conflicts in Iraq and Afghanistan.

The Millennium Cohort Study has now enrolled more than 151,000 service members that are surveyed every 3 years to examine how deployment and other military occupational exposures affect the long-term physical and mental health of military members and veterans.

- 50% deployed in support of OIF/OEF
- 50% Reserve Guard
- 25% separated from the military

- Panel 1: 77,000
- Panel 2: 31,100
- Panel 3: 43,000
Family Study Design Overview

- Family member assessment added to new enrollees in the Millennium Cohort Study, which will be launched in 2010 and enroll about 62,000 new service member participants

- Enroll ~ 10,000 spouses, about half of whom are spouses of service members who have been deployed to OEF/OIF at least once

- Primary Aim 1: To assess the impact of OIF/OEF deployment on:
  - mental health and related outcomes of spouses and co-resident children of service member
  - the quality of the relationships between service members, spouses and their children
  - the associations between family member outcomes and service member outcomes

- Primary Aim 2: To identify vulnerability and resilience factors for deployment stress-related outcomes for spouses and children of deployed service members
Specific outcomes assessed include:

- Spouse’s report of deployment-related stressors
- Spouse’s mental health symptoms (including substance abuse) and mental health service use
- Spouse’s health status and health service use
- Spouse’s sleep and sleep quality
- Spouse’s report of the service member’s health and mental health status and service use
- Family relationships
- Child health and mental health symptoms and service use
Methodology

- Panel 4 of the Millennium Cohort Study includes a probability sample of military service members, oversampling for female and married service members.

- Married service members will be asked to grant permission to contact their spouse.

- Participants respond via secure website: www.familycohort.org.

- Link to other military data to complement self-report measures with objective measures of exposure, service use, and health-related outcomes.
Married: 
- N = 125,000
- 80% Men
- 20% Women
- 50% estimated to give permission to contact spouse
- 50% estimated to respond
- 25% estimated to enroll in the Millennium Cohort Study
- 65% estimated to give permission to contact spouse
- 50% estimated to respond

Not Married: 
- N = 125,000
- 80% Men
- 20% Women

*Active-duty, Reserve, and National Guard, oversampling for female and married personnel*
Research will inform policy makers and guide intervention and prevention strategies related to:

- Family member resilience
- Deployment-related stress
- Family support dynamics
- Service member and family well-being
- Force readiness
- Military separation
- Barriers to care

Main Survey Topics:

- Demographic information
- General health (including sleep)
- Spouse, family, child, and service member stress
- Impact of deployment and military service
- Family cohesion, expressiveness, and conflict
- Child behavioral, developmental and general health
- Health services
- Alcohol and tobacco use
- Military specific questions for active-duty spouses
Selected Family Study Hypotheses

- Military families will demonstrate resilience during deployment and other periods of significant stress.

- Increased stress on the family system as a result of deployment to a war-zone is associated with greater levels of psychological distress.

- Spouses of deployed service members will report higher levels of psychological distress than spouses of non-deployed.

- Level of spousal distress will be associated with number of deployments to war zones, duration of the deployments, and the level of warfighters’ exposure to combat and other war zone stressors.

- Children of deployed services members will have higher levels of internalizing and externalizing behavioral problems, in a dose-response relationship.
Preliminary Deliverable and Dissemination Plan

- **All years:**
  - Quarterly and Annual Reports, IPRs, comprehensive final report

- **Years 1/2:**
  - Standard methodological studies, e.g.:
    * nonresponse analyses
    * comparability at baseline of deployed vs non-deployed groups
    * internal consistency reliability and dimensionality of multi-item scales.

- **Years 2/3:**
  - “Main findings” manuscripts, e.g.:
    * spouse stressors, health, mental health, and functioning (deployed vs non-deployed, service member vs spouse);
    * relationship quality;
    * health, mental health, and functioning of children (spouse report of Sx, record based Dx and service use information).

- **Years 4/5:**
  - Conceptually-driven manuscripts, e.g.:
    * mediators and moderators of relationships of exposures and outcomes
    * SEM models of hypothesized causal factors
Study Progress to Date

- NHRC IRB approved study protocol
- Family questionnaire developed and submitted to OMB for review and approval
- Family study secure website developed and tested
- Web-based questionnaire developed and being tested
- Scientific Review Panel recruited and initial meeting scheduled for September 21, 2010
- Study aims and design presented and critically discussed at multiple professional meetings
- Study analysis and dissemination plans under development
Force Health Protection

Phoenix, AZ, 8-2010
The Millennium Cohort Family Study will be the largest prospective study in military service experience, oversampling for women and married, to enroll in the Millennium Cohort Study in 2010.

Of the 250,000 invitees, half are married. Approximately half will be married to service members who have deployed in support of the wars in Iraq and Afghanistan.

The Millennium Cohort Family Study Enrollment Timeline

2001 Cohort: 1st Enrollment
N = 77,047
Main Survey Topics:
- General health (including sleep)
- Alcohol and tobacco use
- Health services
- Family cohesion, expressiveness, and conflict
- Children's health outcomes
- Service member stress
- Military specific questions for active-duty spouses

2004 Cohort: 2nd Enrollment
N = 31,110
- Women
n = 26,000
- Men
n = 5,110

2007 Cohort: 3rd Enrollment
N = 43,440
- Women
n = 33,000
- Men
n = 10,440

2010 Family Cohort
N = 250,000
- Women
n ~ 20,313
- Men
n ~ 22,687

2010 Millennium Cohort Enrollment: Military personnel with 2-5 years (24-60 months) of service
N = 250,000
- Married
n = 125,000
- Not Married
n = 125,000
- Men
n = 100,000
- Women
n = 25,000

65% estimated to give permission to contact spouse
n = 20,313

90% estimated to respond
n = 16,000 spouses enrolling in the Millennium Cohort Family Study

Longitudinal Contact
- Postcards and Study Updates will be sent to participants to promote Family Cohort identity, as well as to encourage participants to complete the survey and update their contact information.

Acknowledgements
- The views expressed in this research are those of the authors and not necessarily reflect the official policy or position of the US Government. Human subjects participated in this study after giving their free and informed consent. This research has been conducted in compliance with all applicable Federal Regulations and the views expressed in this research are those of the authors and not necessarily reflect the official policy or position of the US Government. Human subjects participated in this study after giving their free and informed consent. This research has been conducted in compliance with all applicable Federal Regulations.
Congressional Black Caucus

Washington, DC, 9-14-2010
Responding to the Needs of Military Children and Families: Collaboration, Research, Services, and Policies

Ernestine Briggs-King, PhD
National Center for Child Traumatic Stress
Duke University School of Medicine
American Psychological Association
September 17, 2010
Challenges of Military Children & Families

- Extended/repeated separations
- Shifting family roles and responsibilities
- Increased stress on caretaking parent
- Media exposure
- Impact of exposure on returning parent
- Higher risk of spousal and child maltreatment
- Parental physical and mental health problems, or loss
- Rising rates of military child mental health utilization
What is the Millennium Cohort Family Study?

- Assesses the impact of military service on the health and well-being of service members, spouses, and their children
  - Plans to collect data on ~10,000 spouses
    - ~ half married to a service member that has deployed in support of OIF/OEF
  - All military services (includes Reserve and Nat’l Guard)
  - Linked to service member survey (MILCO)
  - Inform policy makers and guide interventions that support resilience & reduce stress

For more information: www.familycohort.org
FOCUS Project Sites

MCB Camp Pendleton, California
MCAGCC Twentynine Palms, California
MCB Camp Lejeune, North Carolina
MCB Kaneohe Bay, Hawaii*
MCB Okinawa, Japan*
MCB Quantico, Virginia
USMC Wounded Warrior Regiment
Naval CBC Gulfport, Mississippi
Naval Base Ventura County, California
Naval Station San Diego, California
Naval Station Norfolk, Virginia*
NAB Coronado Island, California
NAB East Little Creek / Dam Neck, Virginia
NAS Whidbey Island, Washington*
Camp Pendleton- Wounded Warrior Battalion West
Camp Lejeune - Warrior Battalion East

* Initiated for Army & Air Force 9/09 through DOD Mil. Family and Community Policy Office
FOCUS Adaptations

Modified to meet the specific needs of families:

- FOCUS Wounded Warrior
- FOCUS Communication and Remote Education (CARE)
- FOCUS Couples
- FOCUS Early Childhood
- FOCUS Combat Injury
- Focus World

www.focusproject.org
APA Efforts on Behalf of Military Families

- Provide education and consultation to Congress, DoD, VA, GAO, VSOs, and other organizations regarding key mental health issues (e.g., PTSD, TBI, suicide)

- Support legislative initiatives related to:
  - Dual military couples with dependents
  - Family caregivers of veterans
  - Recruitment and retention of military and VA psychologists

- Support the newly formed Senate Military Family Caucus and the established House Military Family Caucus
Acknowledgments
Spouse Impact Studies

- Descriptive analyses of demographic, medical, behavioral and emotional characteristics of spouses in military families

- Descriptive analyses of spouse receipt of mental health services
Spouse Impact Studies

- Compare emotional and behavioral and medical problems of spouses of service members deployed in OEF and OIF with spouses of service members deployed to a non-warzone and those not yet deployed
  - Account for family strengths and vulnerabilities
  - Account for age/development of children in family
Among spouses with a service member partner who had been deployed to OEF and/or OIF, compare spouse’s medical, emotional and behavioral problems between families’ whose deployed service member experienced severe readjustment problems (e.g., PTSD symptoms) with families’ whose deployed service member did not experience such problems.

- Account for family strengths and vulnerabilities, including spouse anxiety and depression
- Account for age/development of children in family
Spousal Impact Studies

- Among spouses with a service member partner who had been deployed to OEF and/or OIF, compare quality of marital relationship, marital satisfaction, and family adjustment between families’ whose deployed service member experienced severe readjustment problems (e.g., PTSD symptoms) with families’ whose deployed service member did not experience such problems.
Spousal Impact Studies: Dual Deployment Families

- Among spouses who are themselves service members and have a service member partner who has been deployed to OEF and/or OIF, compare health and mental health of spouse, quality of marital relationship, marital satisfaction, and family adjustment between families’ in which the spouse has been deployed with families in which the spouse has not been deployed.
1st Annual Scientific Review Panel Meeting

September 21, 2010
Child and Adolescent Studies

- Descriptive analyses of demographic, developmental, medical, behavioral and emotional characteristics of children in military families;

- Descriptive analyses of children’s receipt of services from child-serving systems of care and specific mental health services;
Child and Adolescent Studies

- Compare emotional and behavioral problems of children with a parent who had been deployed with children without a parent who had been deployed;
  - Account for family strengths and vulnerabilities
  - Account for age/development of children in family
Among children with a parent who had been deployed, compare children’s medical, emotional and behavioral problems between families’ whose deployed parent experienced severe readjustment problems (e.g., PTSD symptoms) with families’ whose deployed parent did not experience such problems.

- Account for family strengths and vulnerabilities, including spouse anxiety and depression
- Account for age/development of children in family
1st Annual Scientific Review Panel Meeting
September 21, 2010
Nonresponse Analysis

- Nonresponse analyses using Panel 4 members
  - Detailed electronic demographic data available for invited Panel 4 military personnel
    - Use logistic regression to estimate propensity model for providing spouse contact information
    - Use logistic regression to estimate propensity model for spouse participating in the Family Cohort
- Identify potential confounders by comparing Family Cohort participants characteristics to military spouse characteristics
  - Only limited information can be obtained on military spouses (e.g. age, gender, race/ethnicity)
    - Compare characteristics of Family Cohort participants to all other spouses in the military
Other Nonresponse Analyses

- **Early vs late responder analyses**
  - Compare characteristics of Family Cohort participants based on the amount of time between receipt of spouse contact information and completion of questionnaire, using time-to-event models

- **After Cohort has been established, analyses of nonresponse to the first follow-up can be conducted**
  - Examine characteristics of follow-up responders to assess comparability to baseline responders
Internal Consistency of Multi-Scale Items

- Use the Cronbach alpha coefficient to investigate internal consistency in response patterns for multi-item scales (e.g. SF-36V, PCL-C, PHQ, FACES)
  - Cronbach alpha coefficient of 0.7 or greater would indicate sufficient internal consistency
  - Where appropriate, confirm scale dimensionality via confirmatory factor analysis

- Exploring test retest reliability
  - Potential substudy among participating spouses, asking them to retake part or all of the survey
Deployment Comparison

- Perform analyses to compare baseline characteristics of Family Study participants whose Panel 4 spouses did deploy with those whose spouses did not deploy
  - Understanding these differences would be useful for future substudies where stratified analyses might be performed
Cognitive Dissonance Investigation

- Investigate effects of cognitive dissonance and effort justification on study recruitment
  - Once Panel 4 participant consents, assigned to 1 of 2 groups
  - Group 1 will be asked for permission to contact their spouse for participation in the Millennium Cohort Family Study before taking the survey
  - Group 2 will be asked to give permission after they have completed the survey
  - Group 2 participants are expected to experience cognitive dissonance after completing the 100 item survey, consequently inflating the importance of the survey
  - Hypothesis => Group 2 participants will be more likely to provide their spouses’ contact information than group 1 participants based on having experienced cognitive dissonance
Other Analyses to Consider

- Compare self-reported physician diagnosed conditions with electronic ambulatory and hospitalization encounters
  - A major limitation is that there is not complete visibility of ambulatory visits and hospitalizations for military spouses

- Birth outcomes among women
  - Compare self-report of live birth with electronic medical records
    - A major limitation is that there is not complete visibility of ambulatory visits and hospitalizations for military spouses
  - Exploring potential of validating report of birth defects or other ICD-9 coded birth outcomes