



Millennium Cohort Study Overview

Principal Investigator

Naval Health Research Center, San Diego, CA

Defense Health Board Briefing
10 February 2016



Origin of the Millennium Cohort Study



- By 1998 the DoD, Armed Forces Epidemiological Board, and Institute of Medicine recommended a coordinated prospective longitudinal cohort study of Service members
 - Newly available DoD surveillance and electronic health care data
- Section 743, Strom Thurmond National Defense Authorization Act (FY1999):
 - Authorized the Secretary of Defense to establish “a longitudinal study to evaluate data on the health conditions of members of the armed forces upon their return from deployment”
- NHRC designated as the DoD Center for Deployment Health Research





Study Oversight and Management



- Naval Health Research Center
 - Operational oversight
 - Scientific oversight
 - Institutional review board (IRB)
 - Public affairs correspondence
- Military Operational Medicine Research Program
 - Core program funding
 - Programmatic oversight and tracks program objectives
- Defense Health Program
 - Core program funding
- Strategic Board
 - Composed of external group of DoD, VA, and academic stakeholders
 - Strategic guidance on long-term research agenda and dissemination and translation
- Task Area M Committee
 - Composed of internal and external investigators
 - Research proposal review
 - Scientific oversight
 - Research task prioritization





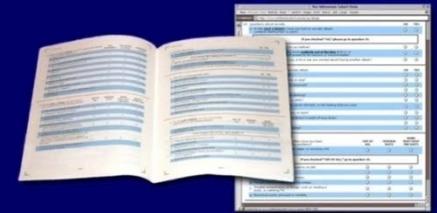
Study Methodology



- Multiple-panel cohort study
 - Initiated July 2001 (pre-9/11)
 - Enrolled panels (groups): 2001, 2004, 2007, 2011
 - Includes Active Duty, Reserve, National Guard

- Participants respond via secure website or traditional paper survey every ~3 years (planned through 2068)

- Questionnaires includes standard survey instruments
 - Includes questions on military (combat, deployment) and other experiences (head trauma, sexual trauma, alcohol, and tobacco use)





Embedded Standardized Survey Instruments



Instrument	Construct
Short-Form 36 (SF-36V)	Physical, mental, functional health
Patient Health Questionnaire (PHQ)	Depression, anxiety, panic syndromes, binge eating, and alcohol-relation problems
Posttraumatic Stress Disorder (PTSD) Checklist-Civilian Version	Posttraumatic stress disorder
Posttraumatic Growth Inventory (PTGI)	Posttraumatic growth
CAGE questionnaire	Alcohol problems
Department of Veterans Affairs Gulf War Survey	Specific war-time exposures (i.e., depleted uranium, chemical or biological warfare agents)
Deployment Risk and Resilience Inventory*	Military and unit support
Insomnia Severity Index (ISI)	Sleep
Adverse Childhood Experiences (ACE)*	Childhood trauma



Complementary Data Sources

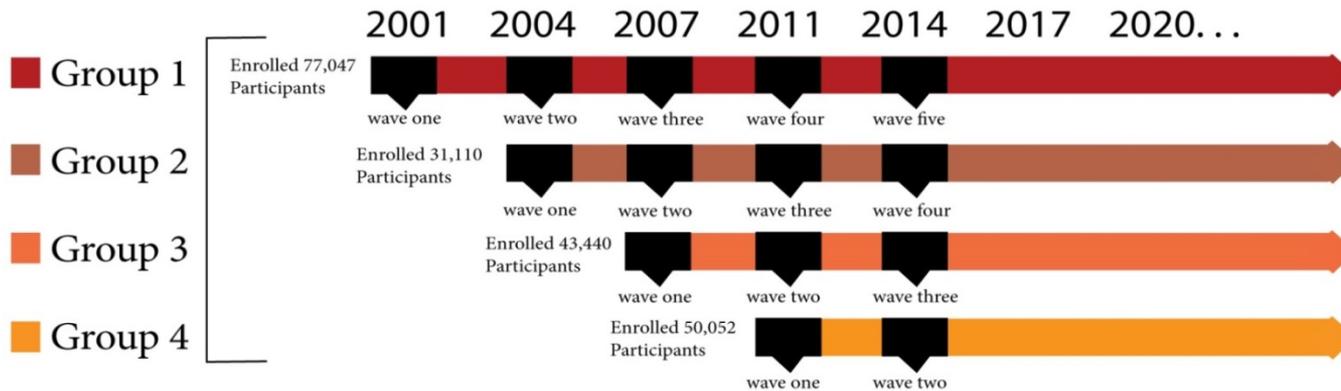




Enrollment and Follow-up (N = 201,620)



Study Timeline



Panel (Group)	Enrollment Dates	Years of Service at Enrollment	Oversampled Groups	Roster Size (Date)	Total Contacted	Total Enrolled (%)
1	Jul 2001–Jun 2003	Unrestricted	Females Reserves/Guard Prior deployers*	256,400 (Oct 2000)	214,388	77,019 (36%)
2	Jun 2004–Feb 2006	1–2	Females Marine Corps	150,000 (Oct 2003)	123,001	31,110 (25%)
3	Jun 2007–Dec 2008	1–3	Females Marine Corps	200,000 (Oct 2006)	154,270	43,439 (28%)
4	Apr 2011–Apr 2013	2–5	Females Married	250,000 (Oct 2010)	247,266	50,052 (20%)

*Deployment to Southwest Asia, Bosnia, and/or Kosovo after August of 1997.



Collaborations

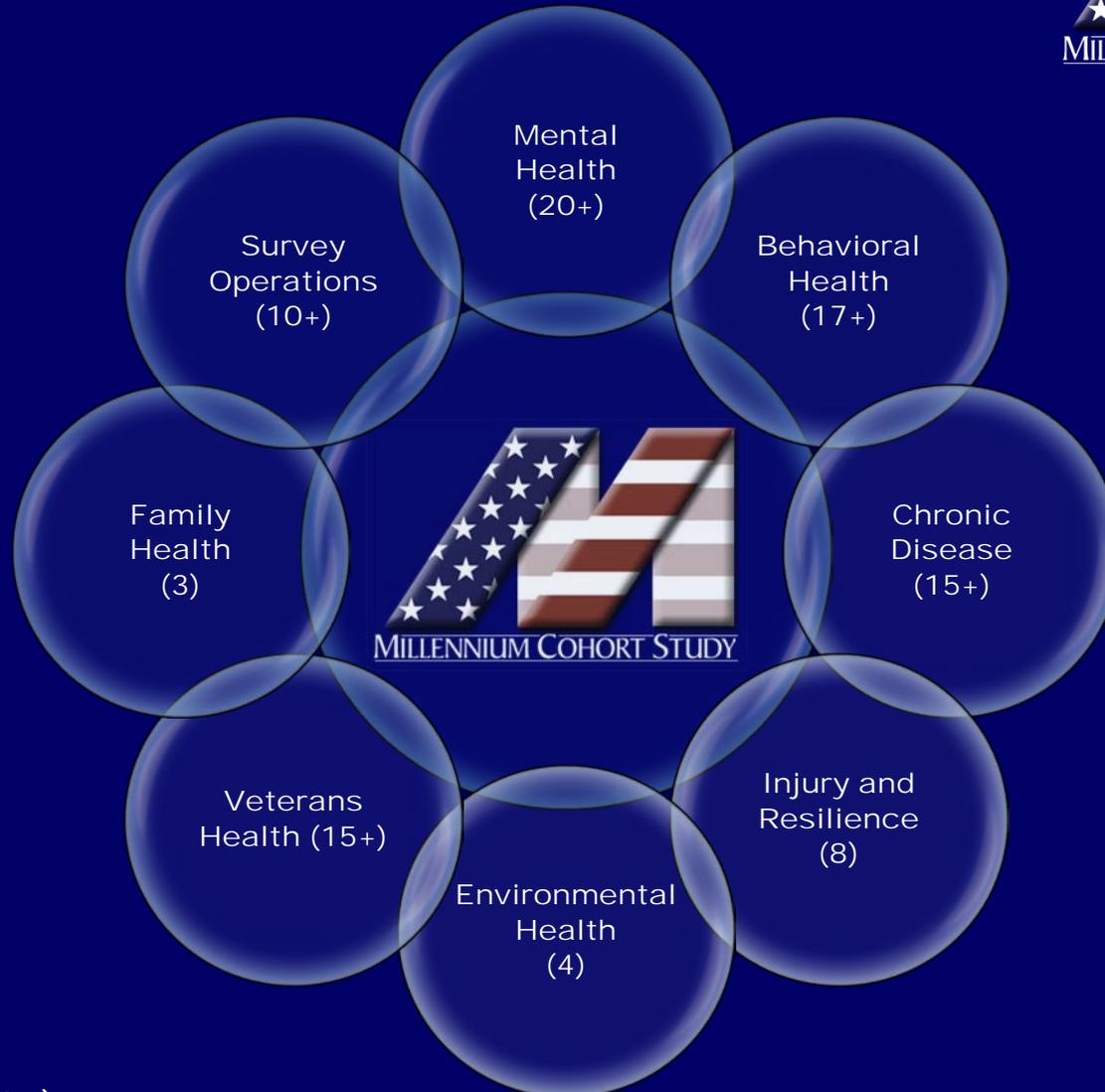


- Research projects include subject matter experts:
 - Military organizations (35+ projects)
 - Veterans organizations (20+)
 - Academic institutions (30+)





Research Program Areas



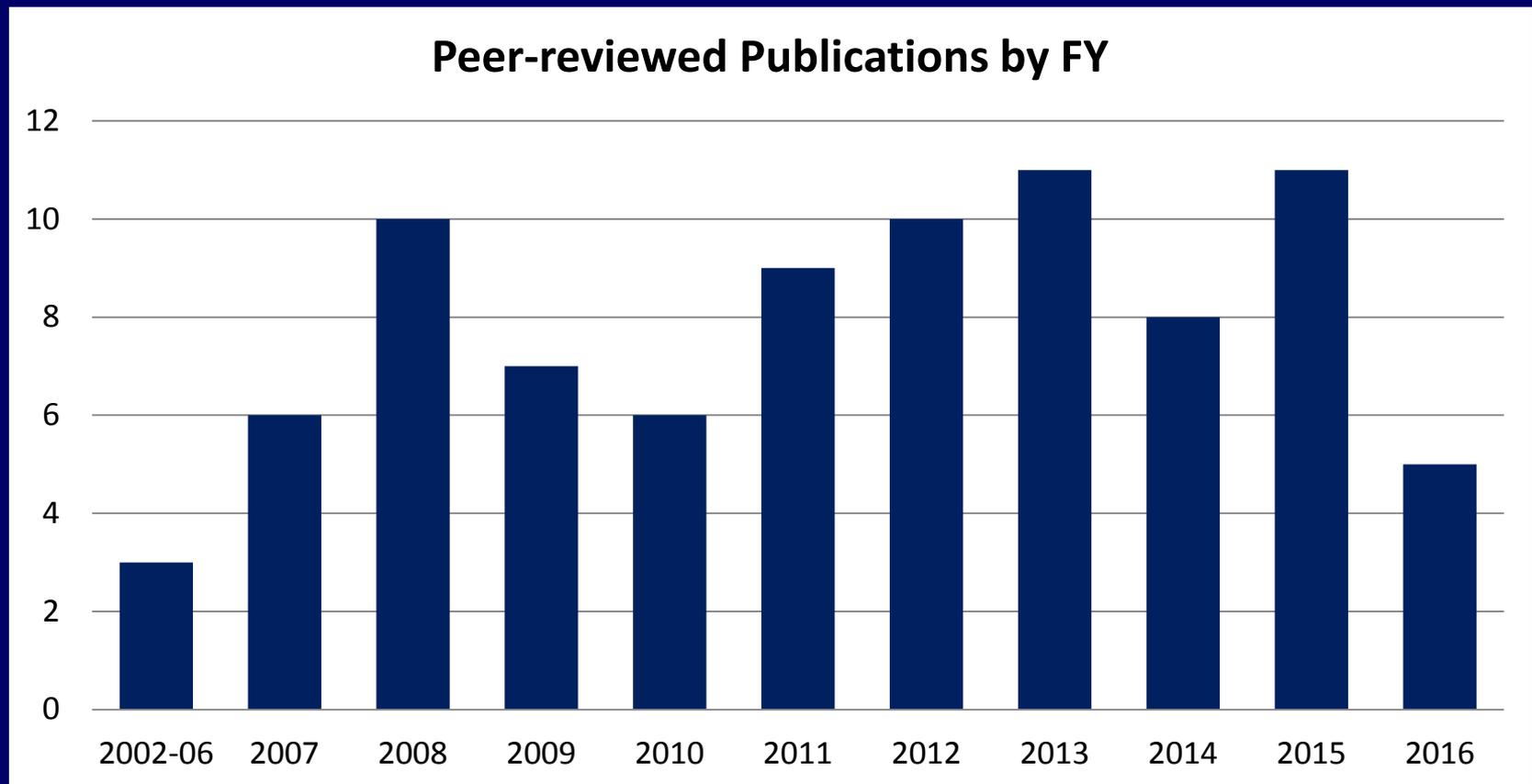
(Publications to date)



Publications and Projects



- Total peer-reviewed publications = 86 (5 currently in press)
- Active projects = 25

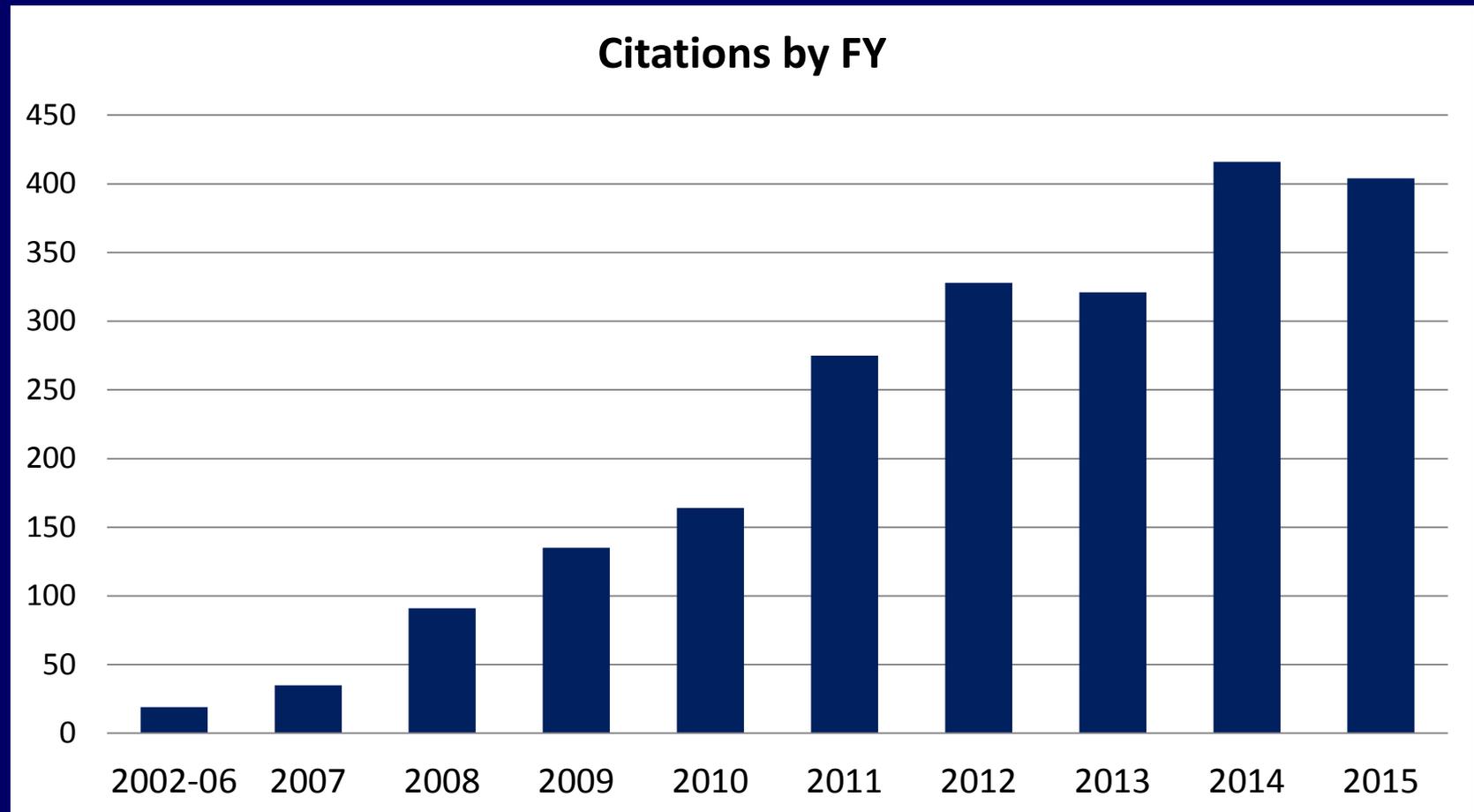




Citations in Peer-Reviewed Literature



➤ Total = 2,188





New Areas of Focus



- Precision Medicine Initiative
 - Collaboration with VA Million Veteran Program (MVP) to enroll Millennium Cohort participants into MVP
- Airborne hazards (DoD/VA working group)
- Traumatic brain injury
 - Questions included in 2014 survey
- Cancer case ascertainment: cancer registry linkages

THE PRECISION MEDICINE INITIATIVE



WHAT IS IT?

Precision medicine is an emerging approach for disease prevention and treatment that takes into account people's individual variations in genes, environment, and lifestyle.

The Precision Medicine Initiative will generate the scientific evidence needed to **move the concept of precision medicine into clinical practice.**

WHY NOW?

The **time is right** because of:

Sequencing of the human genome	Improved technologies for biomedical analysis	New tools for using large datasets
		



Acknowledgements



The Millennium Cohort Study Team includes:

Richard Armenta PhD; Lauren Bauer MPH; Deb Bookwalter PhD; Ania Bukowinski MPH; CPT Adam Cooper PhD; James Davies; Alex Esquivel; CDR Dennis Faix MD MPH; Lt Col Susan Farrish MD MPH; Toni Rose Geronimo; Gia Gumbs MPH; Isabel Jacobson MPH; Claire Kolaja MPH; Joyce Kong PhD; Cynthia LeardMann MPH; William Lee; Hector Lemus PhD; Kyna Long MS; Gordon Lynch; Denise Lovec-Jenkins; Rayna Matsuno PhD; Danielle Mitchell; Kristin Motylinski; Anna Nagel MPH; Chiping Nieh PhD; Chris O'Malley MPH; Serguey Parkhomovsky; Anet Petrosyan; Chris Phillips MD MPH; Ben Porter PhD; Teresa Powell MA; Rudy Rull PhD; Kari Sausedo MA; Beverly Sheppard; Steven Speigle; Daniel Trone PhD; Jennifer Walstrom

Co-Investigators

Dr. Paul Amoroso; Dr. Edward Boyko; Dr. Gary Gackstetter; Dr. Greg Gray; Dr. Tomoko Hooper; Dr. Margaret Ryan; Dr. Tyler Smith; Dr. Timothy Wells

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

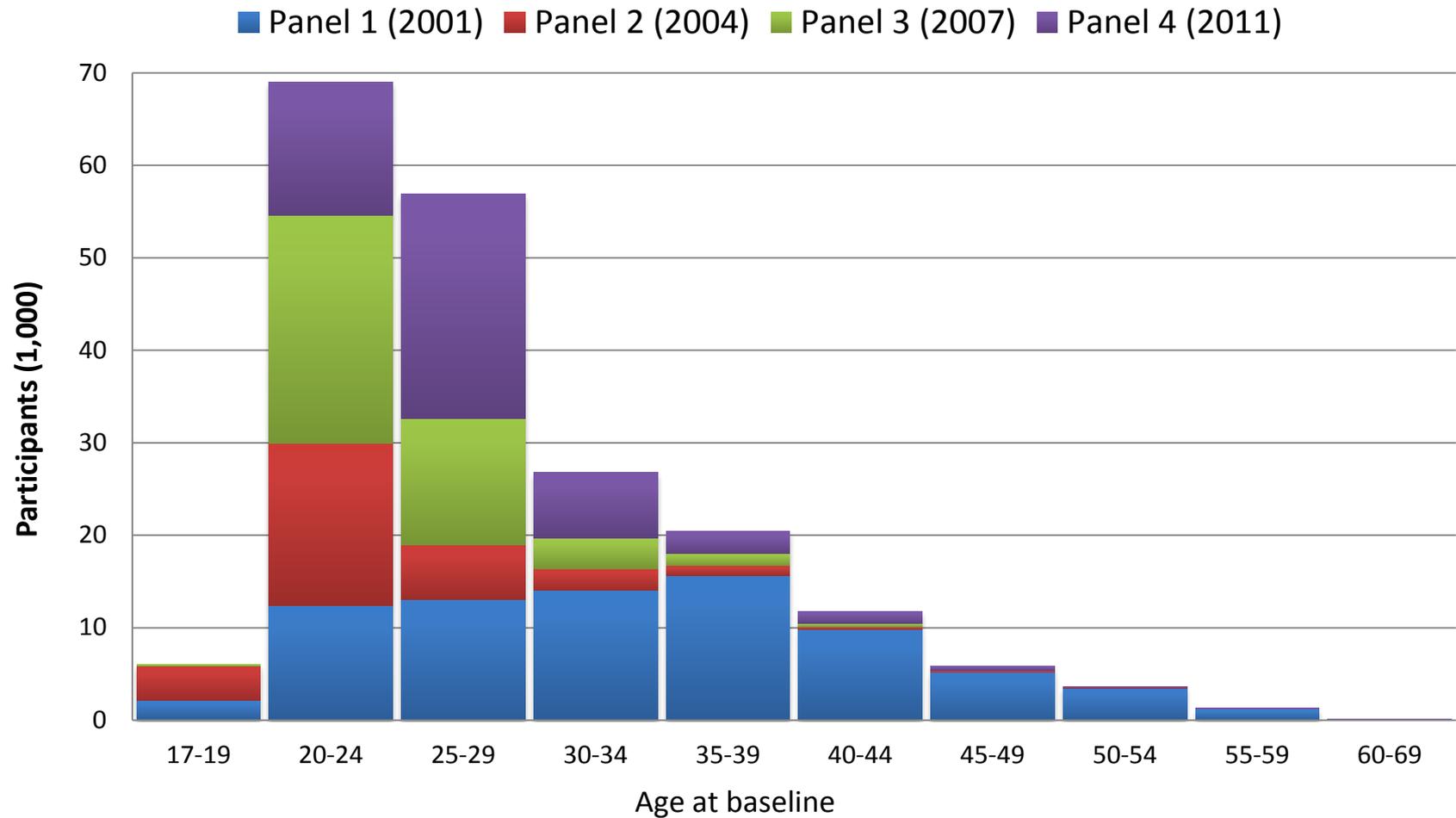


Millennium Cohort Study

BONUS SLIDES

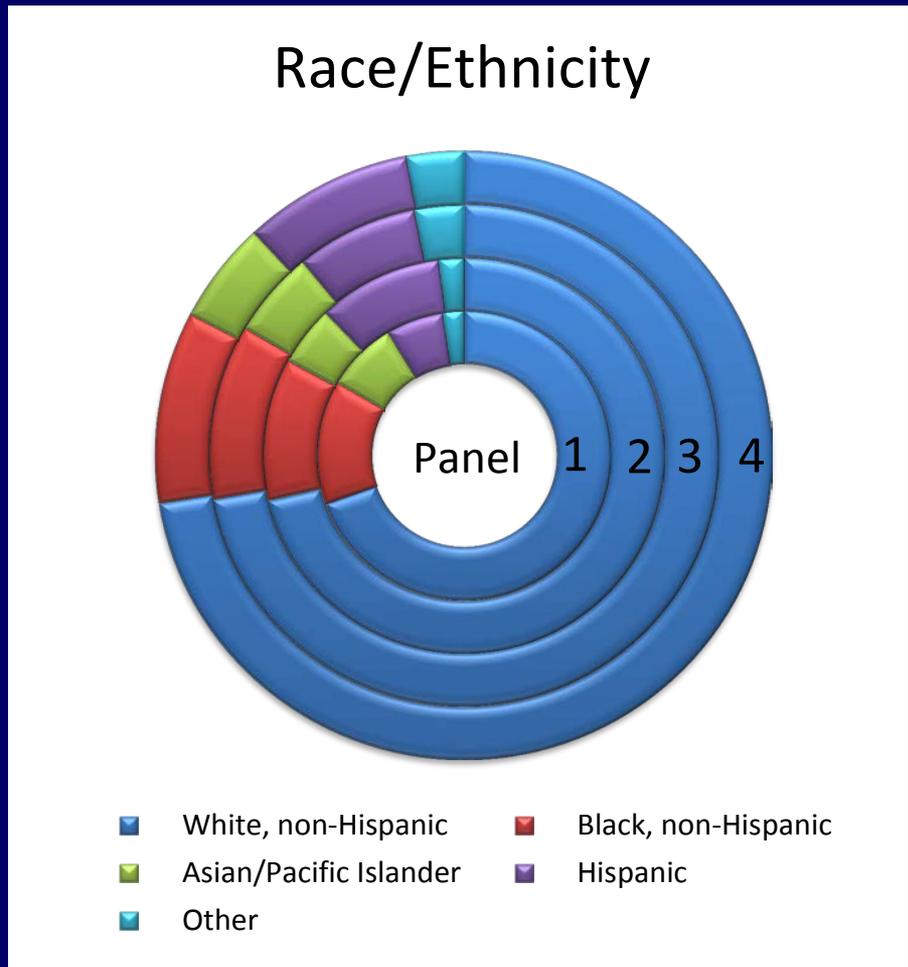
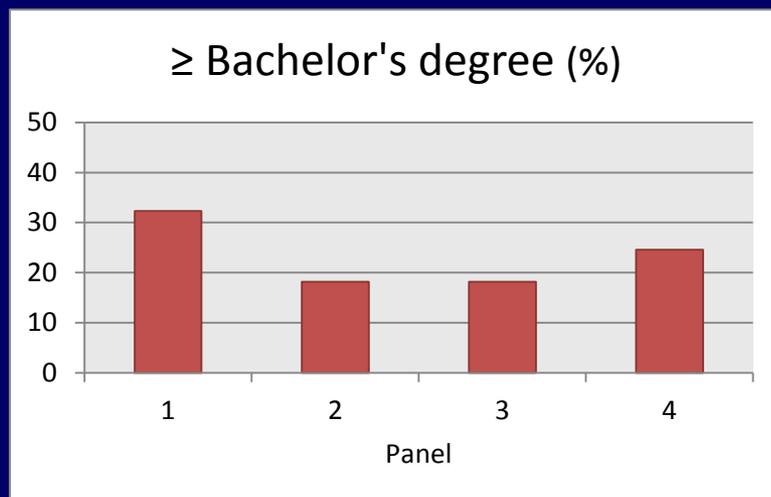
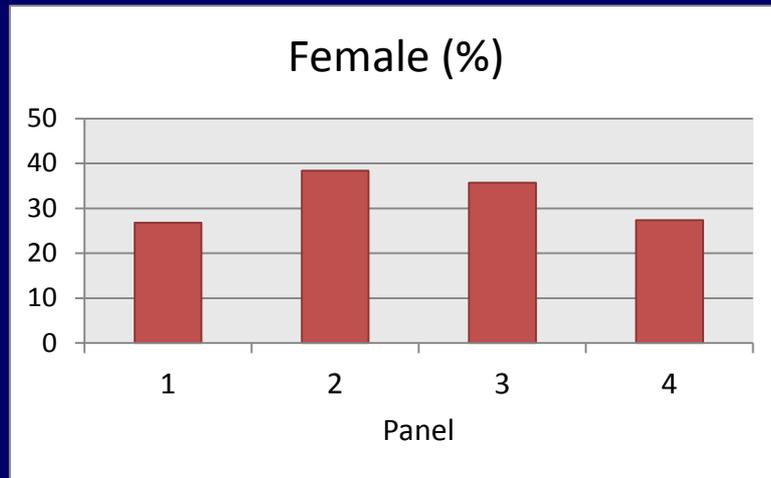


Age at Baseline by Panel





Baseline Demographic Characteristics

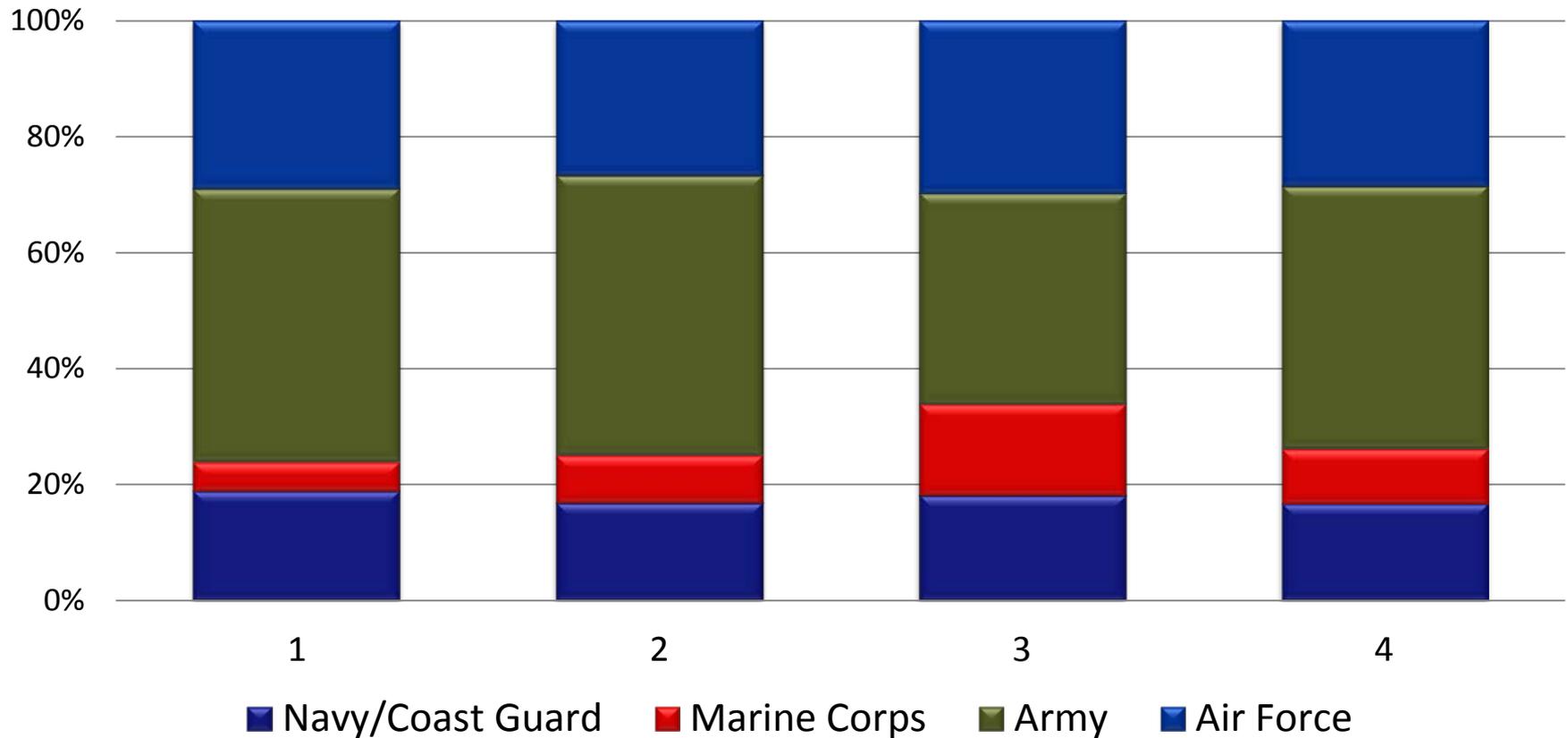




Service Branch by Panel



Service Branch (%)

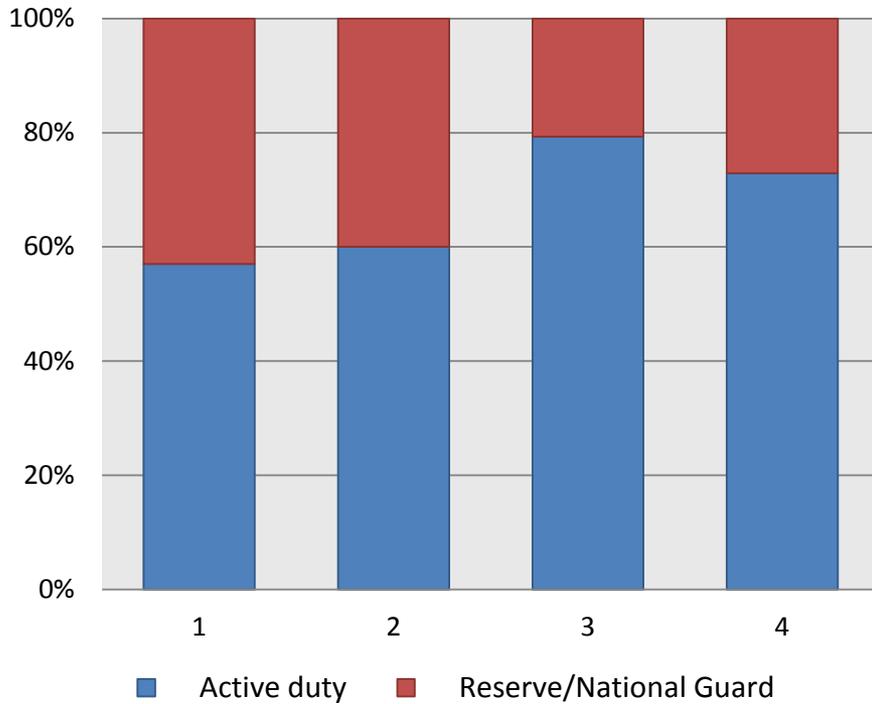




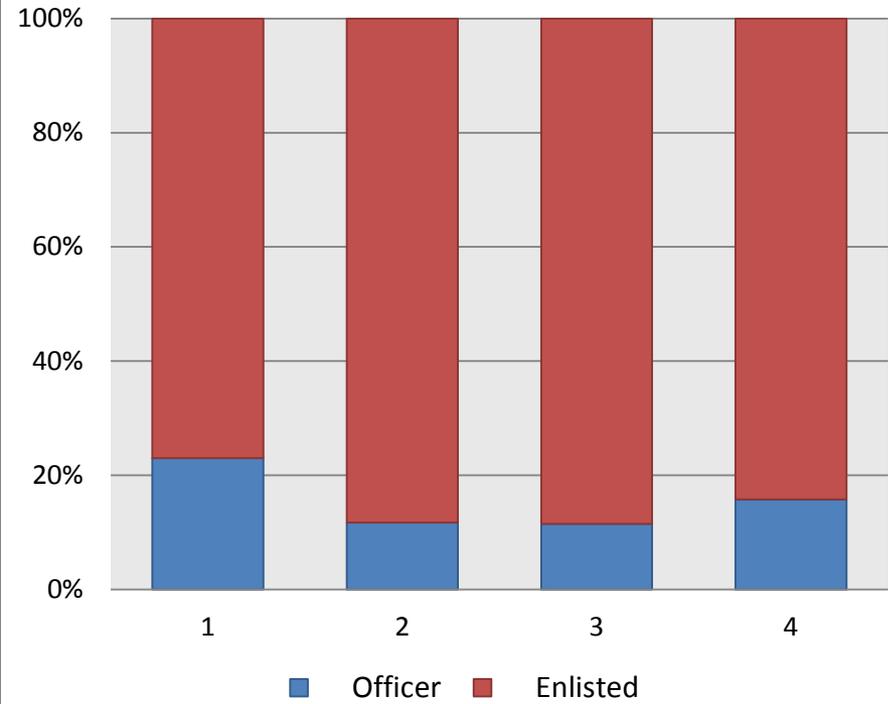
Military Service Characteristics by Panel



Service Component (%)



Pay Grade (%)

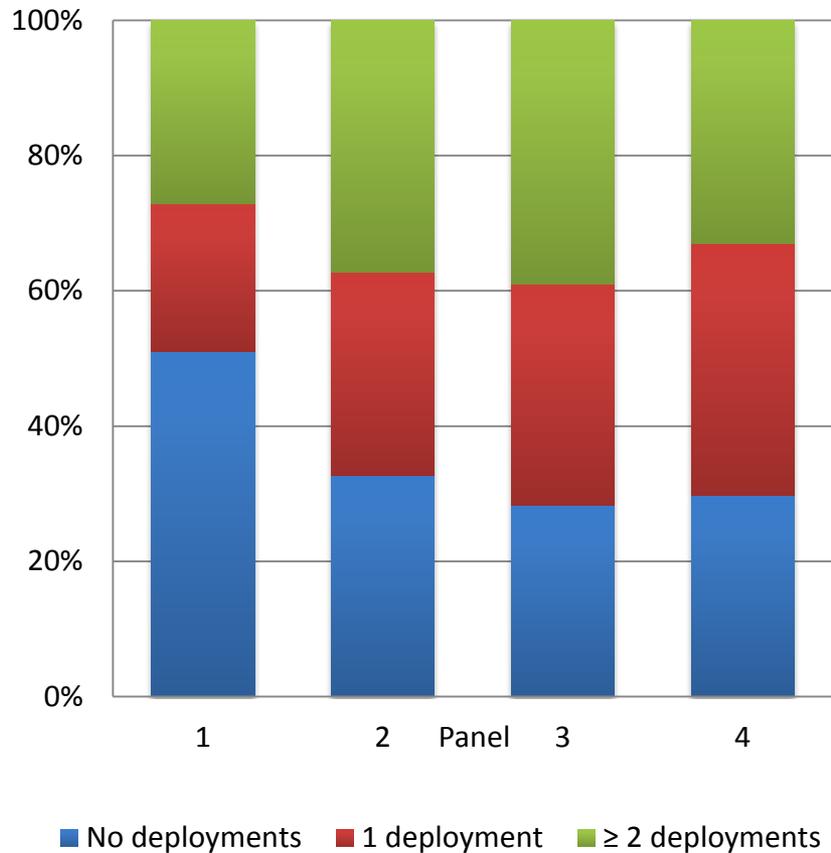




Military Service Characteristics by Panel



Deployment History (%)



Panel	Separated	Deceased ^a
1	70.9%	1.6%
2	62.2%	0.4%
3	55.6%	0.6%
4	34.9%	0.2%

^a As of March 2015.



Embedded Standardized Survey Instruments



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Survey Development Forum



Forums Members
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Forums > Millennium Cohort Survey Discussions > 2017 Millennium Cohort Survey > Psychological Health 9 Items > PTSD 1 Item

PTSD

Discussion in 'PTSD 1 Item' started by Dani Mitchell, May 19, 2015.

[Watch Thread](#)

Dani Mitchell
Administrator
Staff Member

58. In the past month have you experienced...? PCL Not at all A little bit Moderately Quite a bit Extremely

a. Repeated, disturbing memories of stressful experiences from the past	<input type="radio"/>				
b. Repeated, disturbing dreams of stressful experiences from the past	<input type="radio"/>				
c. Suddenly acting or feeling as if stressful experiences were happening again	<input type="radio"/>				
d. Feeling very upset when something happened that reminds you of stressful experiences from the past	<input type="radio"/>				
e. Trouble remembering important parts of stressful experiences from the past	<input type="radio"/>				
f. Loss of interest in activities that you used to enjoy	<input type="radio"/>				
g. Feeling distant or out off from other people	<input type="radio"/>				
h. Feeling emotionally numb, or being unable to have loving feelings for those close to you	<input type="radio"/>				
i. Feeling as if your future will somehow be out short	<input type="radio"/>				
j. Trouble falling asleep or staying asleep	<input type="radio"/>				
k. Feeling irritable or having angry outbursts	<input type="radio"/>				
l. Difficulty concentrating	<input type="radio"/>				
m. Feeling "super-alert" or watchful or on guard	<input type="radio"/>				
n. Feeling jumpy or easily startled	<input type="radio"/>				
o. Physical reactions when something reminds you of stressful experiences from the past	<input type="radio"/>				
p. Efforts to avoid thinking about your stressful experiences from the past or avoid having feelings about them	<input type="radio"/>				
q. Efforts to avoid activities or situations because they remind you of stressful experiences from the past	<input type="radio"/>				

r. Thinking about all items in question 58 a-q above, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?
 Not at all difficult Somewhat difficult Very difficult Extremely difficult

s. Thinking about all items in question 58 a-q above, to what extent, if any, did these problems cause you to feel distress?
 Not at all A little bit Moderately Quite a bit Extremely

Dani Mitchell, May 19, 2015 [Report](#) #1 Like Reply

Ben
New Member

One thing that we might want to think about doing is to look to converting to the PCL which mirrors the DSM-5 or adding items to approximate it. Unfortunately, the PCL-5 has only been developed and validated using the specific form (in reference to a particular trauma). Some of the items are different because of this. However, I highlighted the new items

Attached Files:

	PCL5_Specific.pdf	30.6 KB
	File size:	30.6 KB
	Views:	7

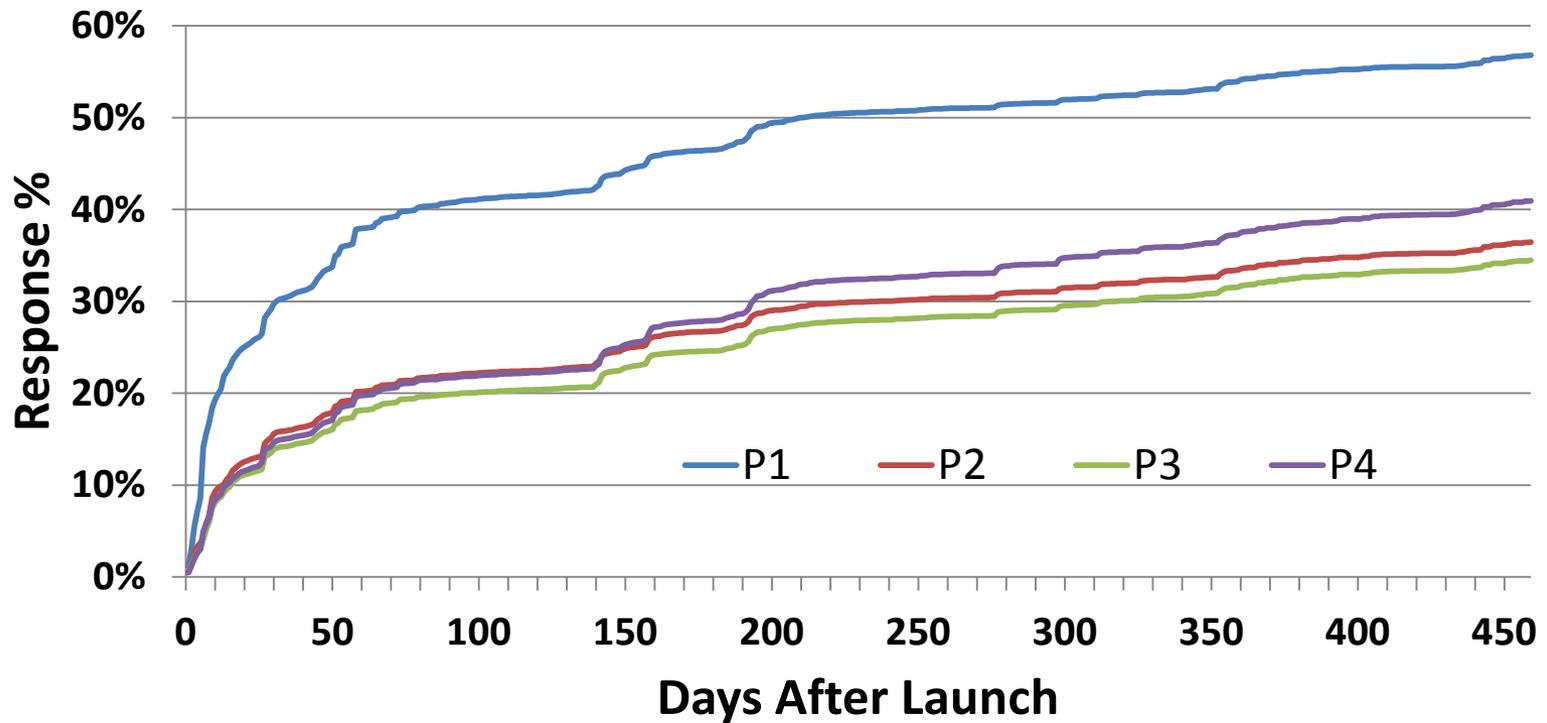
Ben, Jun 17, 2015 [Report](#) #2 Like Reply



FY14-16 Survey Response



Panels 1-4 of the 2014-16 Survey Cycle





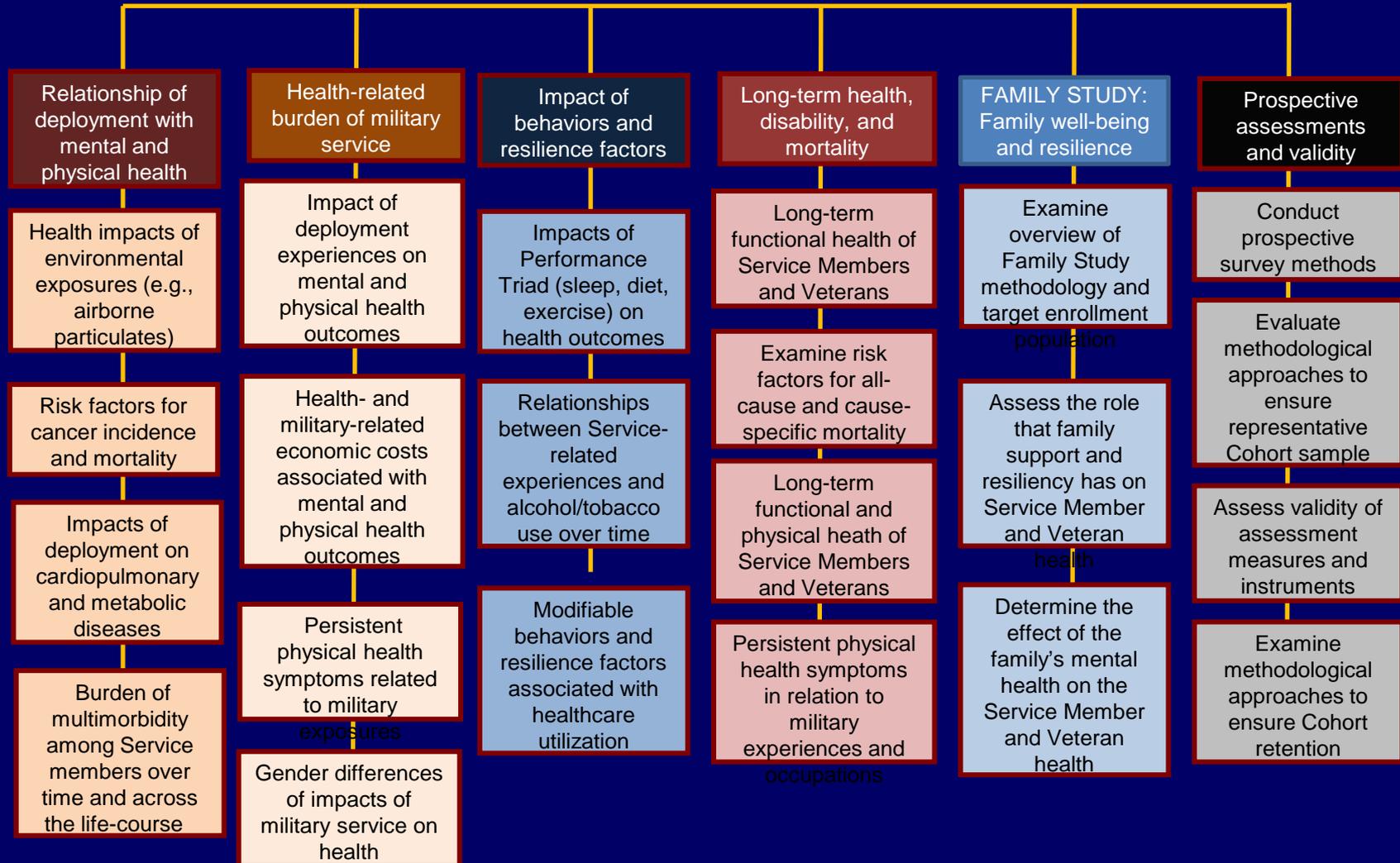
Execution of Fiscal Year (FY) Plans



- FY plans created in advance and submitted to MOMRP
- Ideas are derived from DoD, VA, HA, sponsor, service member concerns, and literature findings
 - Internal team determines project feasibility based on available data
- Task Area M Committee reviews and offers advice on proposals responsive to the FY plan
- Goal is rapid response to queries, including those deemed urgent



Task Area M: FY16 Plan





Key Findings: Mental and Behavioral Health



- Sexual Trauma Outcomes Among Women (J Trauma Stress, 2015)
 - Women who reported recent sexual trauma, harassment or assault, had significantly lower mental health, lower physical health, and more likely to report difficulties in daily work or activities due to emotional health and physical health compared to those who reported no sexual trauma
- Risk factors associated with suicide (JAMA, 2013)
 - Suicide risk was independently associated with depression, manic-depressive disorder, alcohol-related problems, and male gender. None of the deployment or military-related factors were associated with an increased risk for suicide
- New-onset depression and deployment (Am J Pub Health, 2010)
 - Combat-deployed personnel were more than twice as likely to screen positive for new-onset depression compared with non-deployed, while deployment without combat was associated with a decreased risk for new-onset depression



Key Findings: PTSD



- Longitudinal Assessment of Gender Differences in PTSD (J Psych Research, 2015)
 - No significant gender differences were observed when examining the likelihood for developing PTSD among women and men who reported combat experience or among those who did not
 - Additionally, PTSD severity scores were not significantly different by gender, regardless of combat experience
- Preinjury psychiatric status, injury, PTSD (Arch Gen Psychiatry, 2011)
 - After controlling for injury, baseline psychiatric disorders were significantly associated with new-onset PTSD
- PTSD and physical activity (Public Health Rep, 2011)
 - Those who reported at least 20 minutes of vigorous physical activity twice weekly had decreased odds for new-onset and persistent PTSD
- New-onset and persistent PTSD (BMJ, 2008)
 - Combat deployers were three times as likely to screen positive for PTSD compared with non-deployed
 - Deployment was not associated with PTSD persistence



Key Findings: Physical Health



- Pre-deployment sleep and post-deployment mental health (Sleep, 2013)
 - Combat-related trauma and pre-deployment insomnia symptoms were significantly associated with developing posttraumatic stress disorder, depression, and anxiety following deployment
- Combat deployment and sexual harassment and assault (Women's Health Issues, 2013)
 - Significant risk factors for sexual trauma included prior deployment with combat experience, serving as a Marine, younger age, recent marital separation or divorce, positive screen for a prior mental health condition, moderate/severe life stress, and prior sexual trauma experiences
- Diabetes, deployment and mental health (Diabetes Care, 2010)
 - Those who screened positive for baseline PTSD, but not other mental disorders, had a 2-fold increase in type 2 diabetes risk