

Corporal Anthony McDaniel lost both his legs and his left hand to an improvised explosive device in August 2010. Now McDaniel is pushing his mind and body to the limit as he competes against other Wounded Warriors in the 2012 Marine Corps Trials hosted by the Wounded Warrior Regiment. (Photo by Sergeant Mark Fayloga)



Wounded, Ill, and Injured Project FY2014 Annual Report

Public Health Support for Our Nation's Warriors



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Wounded, Ill, and Injured Project FY2014 Annual Report

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Message from the Commanding Officer



Captain Scott R. Jonson
Commanding Officer, NMCPHC

Five years ago, Navy Medicine had a vision for a comprehensive program that would serve the needs of our warfighters across the continuum of care. In response, the United States Navy's Bureau of Medicine and Surgery (BUMED) Wounded, Ill, and Injured (WII) Program (M9) was established to improve the services offered to WII service members, their families, and their caregivers. BUMED charged the Navy and Marine Corps Public Health Center (NMCPHC) with evaluating the health and associated needs of WII Sailors and Marines, identifying and monitoring their injuries and illnesses, and assessing the care they received in-garrison and at home.

Since its inception in 2010, the NMCPHC WII Program has become a reliable resource for Navy Medicine leadership, healthcare providers, case managers, caregivers, and WII service members for enhancing readiness and resilience through evidence-based public health strategies. What began as a special program is now an established resource for surveillance trends and program evaluations to promote, protect, and restore the physical and psychological health of our Sailors and Marines. WII program capabilities help leadership across the Navy and Marine Corps make data-driven decisions on policies, procedures, and practices that help prevent and treat illness and injury.

I am proud to present our NMCPHC Wounded, Ill, and Injured Project Fiscal Year (FY) 2014 Annual Report. The report illuminates the accomplishments and benefits of our WII products and services. Some of our most notable successes this year include the following:

- ▶ Developed and utilized metrics that contribute to healthcare process improvements for wounded service members and evaluate the effectiveness of WII projects throughout Navy Medicine.
- ▶ Served as subject matter experts and delivered detailed clinical analyses for Navy suicide case reviews to enhance prevention strategies at the request of the Office of the Chief of Naval Operations.
- ▶ Redesigned the Health Promotion and Wellness WII Website and developed over 100 new resources for the WII population to improve alignment with critical issues facing WII stakeholders.
- ▶ Received a recommendation for the Navy Entomology Center of Excellence to become a World Health Organization Collaborating Center in the field of testing and evaluating of pesticide dispersal technology.
- ▶ Expanded the Navy's Periodic Occupational and Environmental Monitoring Summary program to include new assessments that quantify the health risks associated with environmental stressors and exposures during deployment.
- ▶ Certified 162 scientists and technicians as proficient and deployment-ready to conduct health hazard assessments.

NMCPHC provides diverse capabilities to support the Navy and Marine Corps in preventing illness, improving health outcomes, reducing costs, and maximizing force readiness. The WII program allows us to serve the needs of our operational forces with customized products and services designed to protect our service members around the globe. NMCPHC remains dedicated to serving our WII Sailors and Marines to honor their commitment and sacrifices to protect our nation's freedom.

S.R. Jonson
Captain, Medical Service Corps
United States Navy
Commanding Officer



Photo by Corporal Jackeline Perez Rivera



Photo by Mass Communication Specialist 2nd Class Jason Behnke

Dedication

This report is dedicated to our nation's Sailors and Marines. NMCPHC is committed to protecting their health and enhancing their well-being.





Photo by Sergeant Michael Cifuentes

Executive Summary

The NMCPHC provides public health services and consultation to operational line leaders, medical health professionals, and policy makers to support readiness and resilience throughout the Navy and Marine Corps. NMCPHC delivers expertise in occupational and environmental medicine, disease surveillance, health education, and prevention programs to analyze disease data, promote healthy living, consult on health risk issues, and shape public health in the Navy. These programs align with initiatives throughout the Department of Defense (DoD) and Department of the Navy (DON), including the Military Health System (MHS) Quadruple Aim and the 21st Century Sailor and Marine Initiative, to advance force health protection for service members worldwide.

The NMCPHC WII Program monitors the health outcomes of service members during all phases of deployment and produces targeted products and services for WII Sailors and Marines. The NMCPHC WII Program enhances the readiness, resiliency, and recovery of WII service members by:

- ▶ Developing innovative and evidence-based resources that promote healthy lifestyle choices, prevent disease and illness, facilitate recovery, and evaluate the effectiveness of Navy Medicine services for WII service members.

- ▶ Providing operational and medical leadership with accurate and timely health informatics and public health surveillance to support strategic decisions on military healthcare policies, interventions, and programs.
- ▶ Collaborating with sister services, the Defense Health Agency (DHA), and other federal agencies to evaluate and improve the health of the WII population.

In FY14, the NMCPHC WII Program continued to enhance existing services and create new resources. This annual report details the breadth and depth of services produced by NMCPHC, highlights collaboration among the project teams and across organizations, and demonstrates key findings and impacts of these achievements.





Photo by Mass Communication Specialist Seaman Joseph A. Boomhower

NMCPHC WII Program Description and Strategic Alignment

PROGRAM OVERVIEW

The NMCPHC WII Program produces epidemiological analysis and public health programs and products that strengthen the health and well-being of WII Sailors and Marines. Initiated in FY10 at the request of Navy Medicine leadership, the program developed extensive surveillance and program evaluation capabilities to monitor health outcomes and conduct detailed assessments of the care delivered to WII Sailors and Marines. As a result, these capabilities presented operational leadership with data-driven information to address emerging public health issues and enhance healthcare for WII service members as well as optimized health promotion and prevention efforts for Sailors and Marines. These products and services are unique to NMCPHC, making the Public Health Center the go-to resource for epidemiologic surveillance, analytics, and program evaluations.

In FY14, the NMCPHC WII Program consisted of four distinct projects: **WII 141 Expanded Surveillance and Metrics Support**, **WII 141A Health Promotion and Wellness (HPW)**, **WII 141B Health Hazard Assessment (HHA)**, and **WII 141C Navy Entomology Center of Excellence (NECE)**. These projects supply healthcare providers, scientists, commanders, leadership, and Sailors, Marines, and their families with tailored WII products and services. Using evidence-based information, the program generates reports on population health and

healthcare services that can drive policy decisions. In addition, the projects deliver outreach and educational resources that promote healthy behaviors and develop resources to protect service members against environmental hazards, occupational stressors, and blood-feeding insects that carry human disease.

The **Expanded Surveillance and Metrics Support Project** examines BUMED WII programs to assess their effectiveness and generates clinical health analysis in an effort to reduce expenses and improve clinical results. WII 141 surveillance activities capture and analyze medical, personnel, and operational databases to assess the health and well-being of Sailors and Marines before, during, and after deployment. The project provides operational and medical leadership near real-time reporting on health concerns affecting WII service members and impacting mission readiness. The **HPW Project** extends prevention efforts through evidence-based health promotion programs that hasten recovery and promote healthy lifestyles. These programs increase awareness among the WII population regarding healthy and unhealthy behaviors that may affect healing, recovery, psychological health, and overall resilience and assist individuals in achieving optimal readiness. The **HHA Project** supports deployment health by identifying potential health risks, developing courses of action, and advising commanders of risks and threat countermeasures.

NMCPHC WII PROGRAM DESCRIPTION AND STRATEGIC ALIGNMENT

The HHA program also administers training for Preventive Medicine Technicians to control and mitigate health hazards on the battlefield. Finally, the **NECE Project** assesses effective ways to protect service members from blood-feeding insects that carry potentially devastating human diseases.

Since its inception, the NMCPHC WII Program has transformed from specialized projects to an enduring service for the DON and continues to improve its products designed to enhance the readiness, resilience, and recovery of service members. The HPW Project established many instrumental resources on healthy behaviors that can help achieve optimal health for the WII population. These new resources enhanced integration across the HPW program to deliver healthy living products for service members throughout the continuum of care. While the HPW Project concluded in FY13, it was supported through FY14 with supplemental end of year funding, and is now maintained as part of the NMCPHC HPW program. In FY14, the HHA Project concluded after completing several risk assessments for various expeditionary environments, which supports the shared service of assessing environmental exposures faced by deployed service members. With this revised program structure, NMCPHC remains committed to providing services that inform healthcare decisions and policy and products to protect service members throughout the deployment cycle.

STRATEGIC ALIGNMENT

The NMCPHC WII Program aligns to many strategic initiatives throughout the DoD and DON, as depicted in Figure 1, including the MHS Quadruple Aim, Navy Medicine Strategic Goals, 21st Century Sailor and Marine Initiative, and Force Health Protection. Each strategy enhances the readiness, resilience, and wellness of Sailors and Marines and serves as the guiding frameworks for NMCPHC WII program products and services. The complementary strategic initiatives aim to achieve a healthy force and ensure access to appropriate care and services. The NMCPHC WII Program aligns to these goals through its products and services while supporting Navy Medicine's mission to enable healthcare that is patient-centered, delivers the best value, preserves health, and maintains readiness of the Navy and Marine Corps. The program contributes actionable data that supports this enduring mission and the needs of the Fleet operational leadership. It also delivers innovative solutions and tailored outreach for the WII population. This report presents an overview of the program and its key accomplishments that contribute to the health and well-being of the WII population and overall support to Navy Medicine.

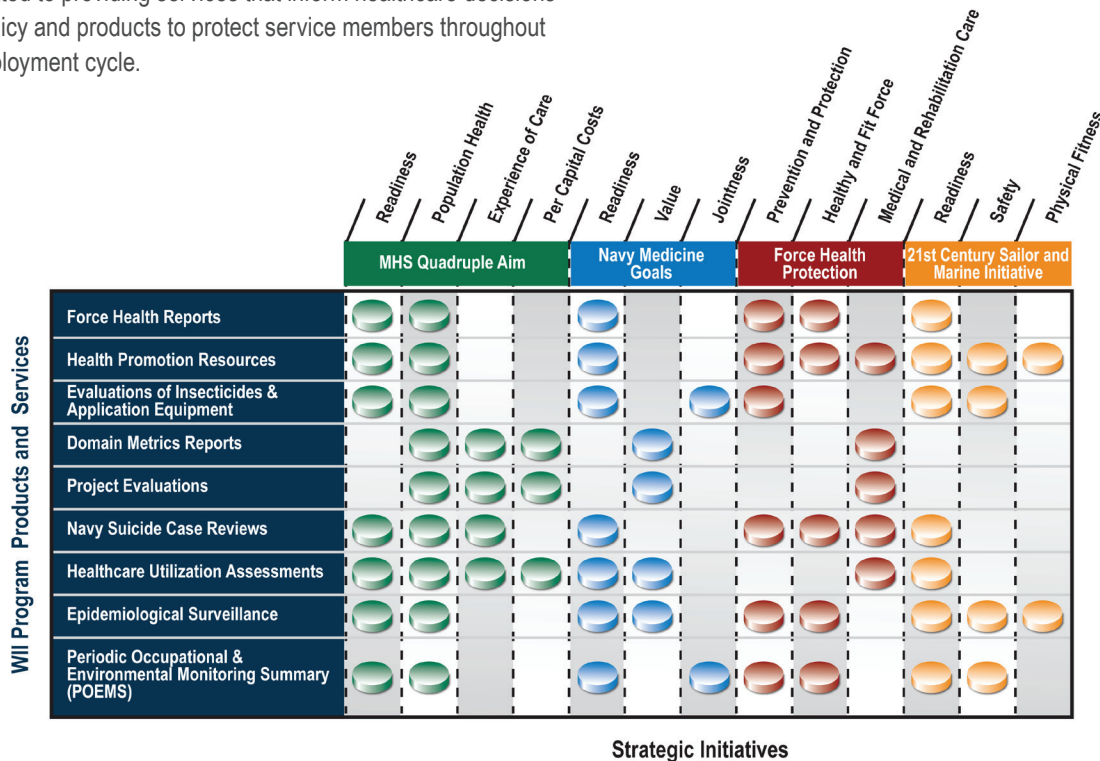


Figure 1: NMCPHC WII Products and Services Alignment to Strategic Initiatives

WII 141 Project: Expanded Surveillance & Metrics Support

EpiData Center

BLUF: Delivers actionable data for operational commanders to understand the impact of health conditions on readiness. The EpiData Center (EDC) conducts population health surveillance and near real-time reporting on outcomes from deployment-related exposures and health trends affecting WII service members.

Suicide Analyses

- Conducted multiple in-depth analyses of suicide ideation, attempts, and deaths among Sailors and Marines for OPNAV N171, the U.S. Marine Corps (USMC) Behavioral Health Group, and Navy Expeditionary Combat Command (NECC) medical leadership.
- Determined the rates, trends, and healthcare utilization related to suicide ideation.
- Identified risk factors and prevention approaches for suicide vulnerability and ideation among WII service members.

Identified suicide risk factors to enhance prevention strategies

Electronic Deployment Health Assessment (eDHA) Program

- Collected and managed DON deployment health assessments; stored data and provided technical support and training.
- Developed compliance measures, analysis, and epidemiological surveillance of health measures.
- Ensured service members deployed over 30 days "boots on the ground" are monitored periodically for physical and behavioral health concerns.

Captured over 100,000 health assessments in FY14



Injury Reports

- Produced reports for DON leadership highlighting blast exposures, motor vehicle injuries, in-theater injuries, and the types and severity of musculoskeletal injuries.
- Used to evaluate prevention efforts, target injury prevention initiatives, and assess the extent and types of injuries experienced by Sailors and Marines both in theater and in garrison.

"An outstanding product and much needed by the safety community in the Marine Corps"
- Marine Corps Safety Division

Deployment Surveillance Consultation

- Contributed design and subject matter expertise on the implementation of the congressionally mandated DoD/Veterans Affairs (VA) Respiratory Injury Registry.
- Participated in the DoD Individual Longitudinal Exposure Record and the DoD/VA Airborne Hazards working groups to further evaluate the medical impact of deployment exposures.

Joint initiatives to enhance follow up for service members post-deployment

Fleet/Force Health Surveillance Reports

- Developed individual reports for nine operational groups to inform Headquarters and Fleet Surgeons on population and health trends.
- Identified behavioral health outcomes, prevalence rates of extended medication use, positive self-reported behavioral health screens on the Post-Deployment Health Reassessment (PDHRA), and major medical events occurring in theater.
- Led to follow-up analyses when potential concerns or needs were identified.

Delivered to over 100 individuals



Reoccurring Surveillance

- Provided Navy and Marine Corps leadership with ongoing surveillance and reports that analyzed trends and outcomes in deployment health, communicable disease, and clinical, injury, and occupation epidemiology.
- Developed metrics to assist WII programs, including snapshots, program overviews, and analyses using in-house data to describe trends in behavioral health and injury in service members.
- Determined the impact and assessed the effectiveness of programs.

Over 8,000 reports distributed in FY14
Delivered 20 annually,
15 quarterly, 26 monthly,
13 weekly, and 20 daily

Behavioral Health Reports

- Developed numerous ad hoc reports to analyze the incidence, prevalence, and encounter burden of behavioral health conditions and Traumatic Brain Injuries (TBI).
- Provided responses to BUMED, NECC, and USMC Headquarters for analysis and occupational risk queries.
- Enabled operational commanders and healthcare providers to make data-driven decisions on policies and practices that help treat and prevent injuries and illness.

Over **5,000** Mental Health Assessments (MHA) analyzed each month to aid in behavioral health surveillance and prevention efforts

U.S. Marine Referral Tracking System

- Created a module within the eDHA system that tracks referrals made by healthcare providers for service members.
- Assisted with tracking progress and encouraging service members to complete follow-up care.

Allowed providers to identify and follow up with patients

Theater Medical Data

- Incorporated theater medical data into numerous existing reports and delivered reports to BUMED and operational leadership. Reports include the Fleet and Force Health Surveillance Reports, Fleet Disease and Non-Battle Injury Report, and TBI surveillance.
- Established a multifaceted approach to ongoing surveillance and health monitoring by enabling surveillance of service members while deployed and prior to returning home.

Increased ability to identify injuries that occur in theater

Psychotropic Drug Use Surveillance

- Described pharmaceutical use in the DoD. Created a report for the Navy Drug Testing Program to assess amphetamine prescribing practices throughout the MHS and a report to determine the percentage of active duty Sailors and Marines with a psychotropic pharmacy transaction in the last year.
- Identified populations with increased use of prescription drugs, including psychotropic medications, to target responses in communities with higher than expected rates.

Identified prescriptions that service members received most often



8,000
Reports Distributed in FY14

WII 141 Project: Expanded Surveillance & Metrics Support

Health Analysis

BLUF: Drives more effective healthcare standards and practices to improve clinical outcomes and reduce costs.

Health Analysis (HA) provides analytic capabilities for Navy Medicine and the broader MHS to evaluate the access to, and quality of healthcare programs.

WII Projects and Program Evaluations

- Assisted BUMED M9 with assessing project effectiveness and improvements in Access to Care (ATC) and Quality of Care (QOC).
- Conducted a rapid program evaluation to guide resource allocation decisions and potential savings of seven million dollars.
- Provided expertise in metrics development for nine WII projects to improve data quality and collection.

"You've given me the exact information I needed to make a difficult decision"
- BUMED M9 leadership

Suicide Case Reviews for OPNAV N171

- Conducted suicide case reviews to identify patterns, evaluate existing programs, determine opportunities for interventions, and assess data quality.
- Informed healthcare leaders and policy makers on program effectiveness and potential interventions to improve mental healthcare and prevent suicide.

4th suicide case review supported by NMCPHC to enable targeted prevention efforts

Behavioral Healthcare Utilization by Military Children

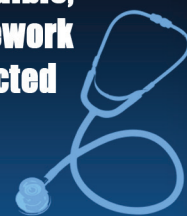
- Analyzed healthcare utilization and identified trends in mental health diagnoses among military children in relation to parent's deployment history.
- Applied advanced and geospatial analysis to identify opportunities to recapture visits from purchased care.
- Assisted the BUMED M9 Director of Family Programs Division with resource allocation and program planning.

Informs decision making to support quality and effective mental healthcare delivery

MHS 90-day Review

- Supported MHS review, ordered by the Secretary of Defense (SECDEF), to evaluate the ATC, QOC, and safety of care received by 9.6 million DoD beneficiaries.
- Provided advanced analytic expertise in conducting enterprise-wide healthcare quality and access assessments, a unique capability developed through the WII 141 Project.
- Led the Defense Health Agency (DHA) analytics cell during the review to ensure the accuracy and credibility of analysis performed by three core working groups assessing ATC, QOC, and patient safety.
- Contributed expertise in qualitative and quantitative analysis, MHS data expertise, data visualizations, and rapid summarization of findings.
- Identified areas of improvement within the MHS to inform resource allocation and prioritization.

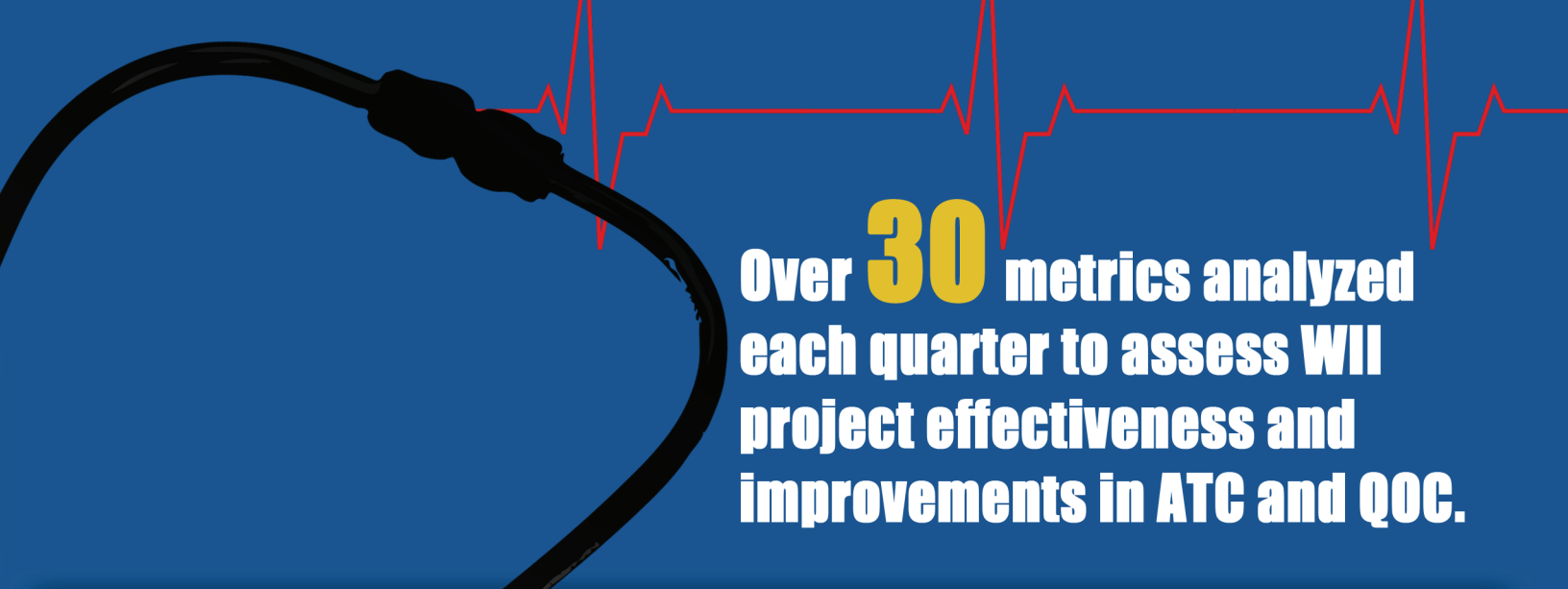
Delivered a credible, validated framework for SECDEF-directed analysis



MHS 90-day review to evaluate the ATC, QOC & safety of care received by

9.6 million DoD beneficiaries





Over **30** metrics analyzed each quarter to assess WII project effectiveness and improvements in ATC and QOC.

Sleep Study Referral Tool

- Developed an evidence-based Sleep Study Referral Tool used to guide providers during patient diagnosis.
- Achieved 100% active duty referral acceptance and \$400K monthly cost avoidance since its implementation at Naval Medical Center Portsmouth (NMCP).
- Posted tool to NMCPHC website for utilization throughout Navy Medicine to improve clinical practice guidelines and patient outcomes.

Potential
\$4.8 million
annual cost avoidance

Tobacco Cessation Metrics

- Developed three tobacco cessation metrics based on clinical practice guidelines for treating tobacco use, aimed to standardize the diagnosis process and documentation.
- Increased the documentation of tobacco use and cessation counseling in patient records.
- Provided to Medical Home Port leadership to support Medical Treatment Facility (MTF) metrics briefs that help hospitals manage recommendations related to tobacco use.

"The feedback from the MTFs has been very positive and the conversations during the briefs that result have been outstanding."
– BUMED leadership

Compliance to DoD Coding Guidance

- Assessed compliance to DoD coding guidance implemented in 2009 for Case Management (CM) services.
- Produced additional analyses for BUMED M9 to support MTF outreach as a result of initial assessment.
- Enabled BUMED leadership to develop targeted education efforts to improve coding compliance.
- Resulted in significant improvements in documentation of CM workload across Navy Medicine.

Increased coding compliance enables an accurate assessment of CM services to improve quality of service and transition of care for patients

Drug Demand Reduction Project, FY14 Report

- Examined prescription drug use among Sailors and Marines from FY09 to FY13 and analyzed prescribing practices for commonly abused medications to identify at risk populations.
- Illustrated that continued monitoring of prescribing practices is critical to understand drug use patterns among Sailors and Marines including WII service members.
- Used in a Navy substance abuse brief to the Navy Surgeon General and the Chief of Naval Operations Executive Group to increase awareness of prescription drug trends and inform decisions on intervention programs.

Assists with Navy functions and policies to reduce prescription drug abuse

Emergency Department (ED) Utilization

- Analyzed ED utilization in the Tidewater region to support direct care recapture efforts and identify cost savings strategies.
- Assessed Emergency Medical Service (EMS) transport utilization and cost among DoD beneficiaries to guide EMS policy development.
- Evaluated the impact of Marine Centered Medical Home (MCMH) program by analyzing MCMH ED utilization among MCMH and non-MCMH enrollees.
- Aligned with BUMED's Patient Centered Medical Home initiatives related to improved QOC and ATC with reduced costs.

"...an exceptionally impressive report. Our expectations have certainly been exceeded."
– BUMED leadership

WII 141A Project:

Health Promotion and Wellness

BLUF: Empowers WII Sailors and Marines, their caregivers, and healthcare providers to adopt and promote healthy behaviors for optimal health.

Health Promotion and Wellness (HPW) develops innovative and evidence-based health promotion resources to facilitate readiness and resilience, prevent illness and injury, hasten recovery, and promote lifelong healthy behaviors among those who are wounded, ill, or injured.

WII Website Redesign

- Conducted a comprehensive redesign and overhaul of the WII website and its 26 sub-pages to distinguish HPW as the go-to resource for WII-related HPW resources.
- Consolidated sub-pages to 15 topics to improve alignment with critical issues facing WII stakeholders.
- Resulted in easier navigation, consistent branding, and improved design for a wide variety of audiences.

Aligned the WII resources to 15 topics critical to WII stakeholders

WII Campaign Materials

- Produced customized brochures, fact sheets, and posters to promote wellness and facilitate readiness among the WII population in the Navy and Marine Corps.
- Developed specific messaging, resources, and tools to provide a holistic campaign in each HPW topic area.
- Covered topics including active living, injury and violence free living, healthy eating, tobacco free living, pain management, psychological and emotional well-being, substance use and abuse, relationships and intimacy, weight management, and HPW for WII Overall.

Created 10 sets of campaign materials that address the needs of the WII population

WII Toolbox

- Developed a virtual toolbox for critical WII topics including depression, nutrition, sleep, relationships and intimacy, integrative and complementary medicine, and caregiver support.
- Created promotional tools to help health educators, providers, and case managers educate the WII audience.
- Delivered practical tools to equip WII service members in their daily battle for healing and recovery.
- Facilitated discussion between WII service members and medical providers on modifying risks and improving health behaviors.

Help WII service members in their daily battle for healing and recovery



Partnership Program

- Continued to engage and establish partnerships with organizations focused on HPW-related missions to increase the promotion of HPW campaign messages with target audiences.
- Delivered turnkey materials to help support partners with quick, easy, and inexpensive outreach.
- Confirmed partnerships include MHS/Operation Live Well, Naval Health Research Center (NHRC), OPNAV N171, and Navy Wounded Warrior - Safe Harbor Mid-Atlantic Region (N95).

Increased the awareness and use of WII products, materials, and services among partners and WII service members

Relationships and Intimacy Materials

- Developed evidence-based resources to help WII service members understand ways to maintain relationships and intimacy.
- Produced educational materials and resources for caregivers and providers to address relationships and intimacy and enhance prevention efforts.
- Addressed topics such as social relationship/social interaction, managing emotions, and managing relationships at work as well preventing social isolation.

Increased understanding of how changes in daily life and added stressors may cause changes in relationships for WII service members

WII Resources and Materials

- Developed over 100 new resources (e.g., infographics, guides, fact sheets, posters, and brochures) to improve the information and usefulness of the WII website.
- Created comprehensive resources with practical and promotional purposes for WII service members, caregivers, and healthcare providers to better support health promotion needs of those recovering from a wound, illness, or injury.
- Addressed gaps in information and materials on a wide variety of topics to include sleep, nutrition, and relationships and intimacy.

Developed over **100**
new resources across
15 topic areas

Navy Medicine Live Blogs

- Increased awareness among WII service members with traumatic amputations of the HPW resources available and their benefits via two blog posts on Navy Medicine Live.
- Coauthored a blog with NHRC that captures NHRC's research insights on service members with amputations, highlights the coordination between NHRC and NMCPHC, and showcases how data analysis can drive HPW resource development.
- Collaborated with the Naval Medical Center San Diego (NMCS D) WII program on a blog to discuss how the Health and Wellness Department at NMCS D supports WII service members and promote the health and wellness services available for the WII population.

Built collaborative
partnerships with NHRC
and the NMCS D Health and
Wellness Department



WII 141B Project: Health Hazard Assessment

BLUF: Provide operational commanders timely risk assessments to guide, control, and mitigate deployment hazards. The Health Hazard Assessment (HHA) Project analyzes occupational and environmental health surveillance data to conduct scientifically defensible health hazard assessments that evaluate the health risks associated with environmental stressors faced by deployed service members.

Proficiency Analytical Testing (PAT)

- Certified healthcare scientists to identify, assess, and control personnel exposures to environmental health stressors in the expeditionary environment.
- Allowed deployable teams to provide operational commanders timely risk assessments to inform their decision-making for the mitigation of deployment health threats.
- Ensured Forward Deployable Preventive Medicine Units (FDPMU) are able to deploy modern field-portable analytical equipment proficiently in different areas.

Completed **162** PATs
for FDPMU teams East and
West in FY14

Periodic Occupational and Environmental Monitoring Summary (POEMS)

- Executed analytical processes to assess environmental data collected from site assessments, environmental samples, and healthcare encounters.
- Evaluated the health risks associated with chemical, biological, and physical stressors faced by deployed personnel to improve population health surveillance.
- Used to provide defensible, definitive assessments of deployment-related environmental exposures to military public health personnel and healthcare providers.

Collected data and
validated POEMS updates
for **30** deployment sites

Iraq

Forward Operating Base (FOB) Hit
FOB Haditha
FOB Al-Qayyarah West

IRAQ

AFGHANISTAN

DJIBOUTI

Djibouti (Africa)
Camp Lemonnier

Afghanistan

Camp Dwyer
FOB Geronimo
FOB Hanson
FOB Marjah
Fire Base Fiddlers Green
Combat Outpost (COP) Koshtay
COP Sharp
Patrol Base (PB) Amir
PB Gorgak

WII 141 C Project: Navy Entomology Center of Excellence

BLUF: Protects service members from blood-feeding insects that carry life-threatening diseases by improving the safety and effectiveness of control programs. The Navy Entomology Center of Excellence (NECE) develops and evaluates new and improved insecticides and application equipment and techniques to protect the health and operational readiness of service members.




World Health Organization Collaborating Center (WHO CC)

- NECE recommended as a WHO CC in the field of testing and evaluating pesticide dispersal technology.
- Invited as the only International Center of Excellence for insecticide application, significantly improving the protection of service members around the globe.
- Increased collaborative research efforts with new national and international entities, resulting in improved products to protect service members against disease-transmitting insects.

29 major collaborative projects in FY14
154 projects since FY11

Front Page Article in the *Wall Street Journal* (WSJ)

- Received front-page coverage in WSJ article entitled "In Florida, Navy Lab Plans Attacks on Creepy Invaders: Center Tests Weapons to Battle Bugs".
- Discussed three different inventions being tested to kill mosquitoes, bed bugs, and ticks in deployed scenarios.
- Focused on more effective, environmentally friendly and cost efficient ways to address insects that pose a significant threat to Sailors and Marines.
- Invited to test civilian inventions and commercially available products for efficacy.
- Initiated collaborative partnerships to improve insect control programs globally.

16  publications in FY14
59  since FY11

Ribonucleic Acid (RNA) Constructs to Reduce Egg Laying in Mosquitoes

- Discovered two types of double-stranded RNA that can significantly reduce and suppress egg laying among mosquitoes.
- Reduced risk of yellow and dengue fever among deployed service members.
- Delivered control tools with no known toxicity to vertebrates thus not requiring a long or expensive Environmental Protection Agency registration during development.
- Provided opportunities to evaluate the effectiveness of these RNA strands against other species of mosquitoes and pests, such as fire ants and flies, which also affect deployed service members.

455 insecticide compounds tested for efficacy in FY14
3,445 tested since FY11

Development of Revolutionary Portable Insecticide Sprayer that uses Sound Vibrating Technology

- Developed electrostatic equipment that controls blood-feeding insects through insecticide spray.
- Used innovative method for producing insecticide fogs to kill mosquitoes that is safer for the user.
- Increased ability to control mosquitoes while reducing the amount of insecticide needed, providing cost efficiency and environmental benefits.
- Delivered a portable, nearly silent application technique ideal for deployed military scenarios.

18 application techniques tested in FY14
149 since FY11

1 pending patent in FY14  **7** since FY11



Photo by Mass Communication Specialist 2nd Class Demetrius Kennon

The Mission Ahead for NMCPHC

With an uncertain future demand on U.S. military forces, the products and services produced by the NMCPHC WII Program will help the DON sustain the health of Sailors and Marines as well as improve the recovery of WII service members. Going forward, the remaining project teams will expand efforts to conduct disease and injury surveillance, assess healthcare received by the WII population, and implement insect control program that prevent injuries and illnesses.

The Expanded Surveillance and Metrics Support Project will improve epidemiological surveillance by monitoring the disease and injury incidence in the Navy and Marine Corps and providing leadership with analyses to enable data-driven corrective actions. The team will examine all available healthcare data throughout the entire deployment cycle to assess health outcomes and measure the impact of WII programs and services to help inform clinical practices and reduce costs across Navy Medicine.

The NECE WII Project will develop cutting-edge entomological products that support the readiness of warriors and guard service members from blood-feeding insects that carry human disease. NECE will establish additional collaborative research efforts with national and international laboratories, universities, and industries to produce new and improved products to protect service members in deployed environments.

Efforts in FY15 will capitalize on the extensive research, analysis, and unique products executed over the past several years to inform targeted prevention, monitoring, and recovery strategies, as well as enhance the long-term health of service members. These services will continue to support operational commanders and healthcare providers in making informed decisions on policies and practices to treat and prevent deployment-related illnesses and injuries. NMCPHC remains dedicated to providing protection through prevention and collaborating with organizations throughout the MHS to advance the ability of decision makers and care providers to improve the health of WII service members.





Photo by Sergeant Mark Fayloga

Appendix A: Products and Services Compendium

The products and services developed by the Navy and Marine Corps Public Health Center (NMCPHC) Wounded, Ill, and Injured (WII) Program support Navy Medicine in addressing the healthcare needs of WII Sailors and Marines. These programs promote healthy lifestyle choices and protect against environmental health hazards while informing decisions to improve clinical results, and reduce healthcare expenses. The following sections showcase the products and services of each WII project along with associated outcomes and impacts that align to public health focus areas.

WII 141 Project: Expanded Surveillance and Metrics Support

The WII 141 Project, supported by the EpiData Center (EDC) and Health Analysis (HA) Departments, provides leadership with epidemiological surveillance and clinical health analysis to support strategic decisions on military healthcare policies and programs. EDC epidemiologists and information technology experts design analytic tools and conduct population health surveillance to enhance military readiness by providing leadership and key stakeholders with information to make data-driven decisions on disease and injury prevention programs. HA experts promote force readiness by providing leadership with information to improve healthcare cost efficiency, reduce process variation in clinical practices, and ensure the development and implementation of quality healthcare services. In Fiscal Year (FY) 2014, the experts within the WII 141 Project applied their knowledge and best practices to inform decisions on healthcare policies, interventions, and programs.



WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT EPIDATA CENTER

EPIDATA CENTER

EDC epidemiologists and information technology experts compile, analyze, and report on population health surveillance to improve military health and wellness, and support WII programs in an effort to reduce illness and injury. In FY14, the EDC incorporated theater medical data into injury, illness, and behavioral health surveillance to provide a multifaceted approach to ongoing surveillance and health monitoring throughout the deployment cycle. The EDC manages near real-time data, providing deployment-related health

information and technical support to ensure service members' health and outcomes are monitored prior to, during, and following their deployments. Additionally, in FY14, the EDC expanded its analysis and reporting of suicide and related conditions, and collaborated with other agencies to deliver comprehensive analytic support to WII stakeholders. The EDC addressed the needs of WII stakeholders through the products and services contained in the tables below.

Focus Area	Key Product	Returns/Outcomes
Ongoing Surveillance	Annual Injury Reports for U.S. Navy and Marine Corps Provided reports using medical encounter records to assess the number and rates of injuries reported each year. Injury prevalence rates identified types and severity of musculoskeletal injuries to improve the Navy Bureau of Medicine and Surgery's (BUMED) ability to allocate resources effectively and efficiently.	Generated reoccurring reports on WII-related illnesses and injuries to provide current epidemiological surveillance on service members pre-, during, and post-deployment to identify, reduce, and prevent injury and disease and improve military readiness.
	Integrated Disability Evaluation System (IDES) Monthly Report Conducted an analysis of the Medical Evaluation Board (MEB) and referrals from the IDES system. Identified Medical Treatment Facilities (MTF) that have met the MEB stage goal of completion within 35 days and the referral goal of less than 10 days.	
	Monthly and Yearly Force and Fleet Health Surveillance Reports Produced reports for nine operational groups to identify behavioral health outcomes, prevalence rates of extended psychotropic medication use, positive self-screens of behavioral health conditions on the Post-Deployment Health Reassessment (PDHRA), and medical encounters while in theater. Provided reports to Headquarters and Force and Fleet Surgeons to assess health trends and identify potential concerns.	
	PDHA/PDHRA Screen Reports and Bi-Weekly PDHRA Reports Provided monthly reports to BUMED and operational leadership describing the number of certified Post-Deployment Health Assessments (PDHA) and PDHRAs and demonstrating trends over the entire year. The report describes number of assessments with positive self-screens for Post-Traumatic Stress Disorder (PTSD), Major Depressive Disorder (MDD), Traumatic Brain Injury (TBI), alcohol use disorder, and suicide/homicide risk and provider concern and referrals.	
	Quarterly TBI Report Developed data analysis and reports on TBI incidence and follow-up for Sailors and Marines by TBI severity category.	
	Navy Expeditionary Combat Command (NECC) WII Registry Created a monthly database registry of NECC service members diagnosed with injuries and behavioral health conditions.	
	PTSD Quarterly Report Generated a report of PTSD incidence rates from 2002 to present that was provided to BUMED. The report identified changing trends and support policy decisions.	

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Focus Area	Key Product	Returns/Outcomes
Ongoing Surveillance (continued)	BUMED MEB Report Designed tables and graphs of information on the average processing days of MEBs for service members at all MTFs. Prepared for BUMED and used in briefings to MTFs and leadership.	Generated reoccurring reports on WII-related illnesses and injuries to provide current epidemiological surveillance on service members pre-, during, and post-deployment to identify, reduce, and prevent injury and disease and improve military readiness.
	Deployment Health Assessment Compliance Reports Provided information on the number of Sailors and Marines who returned from deployment and have a certified PDHRA including information on those who completed the assessment early, on time, and late. Delivered the report to BUMED and operational leadership to monitor compliance trends.	
	Quarterly Alcohol and Substance Abuse Incidence Reports Determined prevalence of alcohol and substance abuse/dependence among Sailors and Marines as requested by BUMED.	
	Mental Health Assessments (MHA) Monthly Report Developed monthly report to provide the number of certified MHAs by service branch and components as well as the number of referrals given. Distributed report to BUMED and operational leadership for situational awareness.	
	Quarterly Electronic Deployment Health Assessment (eDHA) Quality Assurance Report Provided monthly compliance rates of deployment health assessments for the Navy and Marine Corps, as well as the amount of resulting referrals, mental health-specific referrals, and follow-up care.	
	eDHA Data Transfers Provided eDHA data to Armed Forces Health Surveillance Center, Air Force's Aeromedical Services Information Management System, and the Medical Readiness Reporting System to optimize WII health reporting and information sharing among services.	
	Marine Referral Tracking System and Daily Export Managed modules present within the eDHA that track referrals made by healthcare providers and produced daily exports that offer tracking and status reports for providers.	
	Annual Surveillance of TBI Developed a report to provide yearly incidence and prevalence trends of TBIs among active duty Sailors and Marines and detailed information on severity, follow-up care, and demographics.	
	Cobra Gold Provided data entry and storage for health assessment information for U.S. service members in Thailand.	

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Focus Area	Key Product	Returns/Outcomes
BUMED M9 Appointed WII Project Evaluations	Combat Trauma Registry Expeditionary Medical Encounter Database (WII Project #89)	Provided analytic and consultation support to assist with quarterly reporting and analysis for WII projects. Reports improved project interpretation and aided in the ability of Navy Medicine to assess project success and investment. Consultation of projects improved development project design, outcome measures, and indicators of effectiveness.
	U.S. Navy and Marine Corps Reserves Psychological Health Outreach Program (WII Project #90)	
	Returning Warrior Workshop (WII Project #91)	
	Naval Special Warfare Resilience Program (WII Project #93)	
	Case Management (CM) and Coordination for Wounded Warrior Regiment (WII Project #95)	
	Integrated Disability Evaluation System (WII Project #W100)	
	My Ongoing Recovery Experience (MORE) Program (WII Project #101)	
	TBI Treatment and Cognitive Rehabilitation Program, Naval Hospital (NH) Camp LeJeune (NHCL) (WII Project #172)	
	TBI and Related Disorders Mobile Assessment Unit (WII Project #178)	
	Inpatient Mental Health Renovation Project, NHCL (WII Project #W236)	
	USMC Outreach and Coaching (WII Project #W237)	
	Substance Abuse Rehab Program (WII Project #265/266)	
BUMED M9 Internal Metrics	TBI in Garrison	Conducted statistical analyses and outcome assessments of WII programs. Used in-house data to assist in the assessment of program effectiveness and appropriateness of initiatives. Metrics also aided in identifying trends and documenting injury and behavioral health outcomes.
	Trends in TBI Prevalence	
	Mild Traumatic Brain Injury (mTBI) Incidence	
	Number of Marines Predicted to Return from Deployment	
	Total Predicted Encounters in Assigned MTFs	
	Predicting PTSD, TBI, and MDD in Marines Expected to Return from Deployment by Assigned MTF	
	PTSD Burden by MTF, Active Duty Navy and Marine Corps	
	Burden of War-related Amputations Among Navy and Marine Corps	
	Outpatient Suicide Ideation Encounters	
	eDHA Referral Metric	

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Focus Area	Key Product	Returns/Outcomes
Behavioral and Mental Health	NECC PDHRA Behavioral Health Screens and Referrals 2011-2014 Provided information on the number of self-reported positive behavioral health screens and provider referrals on NECC PDHRAs from June 2011 to January 2014.	Developed analytic and descriptive reports of behavioral and mental health outcomes for service members during the three phases of deployment (pre-, during, and post-deployment). Reports covered PTSD, depression and related conditions, TBI, substance use, alcohol use, and assisted with identification of trends and outcomes to help make data-driven policy and health decisions.
	PTSD at Camp Lejeune, Cherry Point, and New River Identified current active duty Sailors and Marines with medical encounters coded as PTSD with a unit location in Camp Lejeune, Cherry Point, or New River for a congressional report.	
	USMC PTSD by Rank Identified incident cases of PTSD among active duty Marines and determined the distribution of service members' ranks from 2002 through 2013. Provided to Marine Corps Headquarters.	
	Navy MORE Program Described separations and change in pay grade of service members enrolled in the MORE program.	
	PTSD/TBI and Other Than Honorable Discharges Specified cases of PTSD and TBI among active duty Marines from the past five years to Assistant Secretary of the Navy (ASN), Manpower and Reserve Affairs (M&RA) to determine the number of individuals with an 'Other than Honorable Discharge'. Requested by Sergeant Major of the Marine Corps.	
	Warrior Transition Program (WTP) Deployment Health Assessment Comparison Identified positive, self-reported mental health screens, provider directed referrals, and general health questionnaire responses from the deployment assessments for WTP participants. Provided to the WTP Care Team.	
	Selected Medication Surveillance in DON, November 2012-October 2013 Provided to BUMED M9 to describe the number and rate of psychotropic medication transactions among active duty Sailors and Marines from November 2012-October 2013.	
	Amphetamine Use among DoD Active Duty Personnel: Trends in Prescription Practices and Exploratory Analysis to Validate Indicated Use, FY07-FY12 Developed an assessment of amphetamine prescribing practices and trends among active duty personnel in all service branches of the U.S. military; provided to the Navy Drug Testing Program.	
	PTSD, Depression, and Alcohol and Substance Abuse for 2011-2013, Active Duty Sailors and Marines Created a report of incidence rates, prevalence rates, and encounter burden of behavioral health conditions provided to BUMED M9.	
	Behavioral Health Deployment Limiting Conditions Supplied a report to NECC that described the monthly encounter prevalence of behavioral health deployment limiting conditions among active duty Navy Construction Battalions.	

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Focus Area	Key Product	Returns/Outcomes
Behavioral and Mental Health (continued)	USMC Behavioral Health by Unit and Occupation Delivered a report analyzing the USMC units and occupation specialties with the highest rates of behavioral health conditions to ensure the appropriate allocation of behavioral health resources.	Developed analytic and descriptive reports of behavioral and mental health outcomes for service members during the three phases of deployment (pre-, during, and post-deployment). Reports covered PTSD, depression and related conditions, TBI, substance use, alcohol use, and assisted with identification of trends and outcomes to help make data-driven policy and health decisions.
	Institute of Medicine PTSD Tasker Provided information to BUMED to forward to the Institute of Medicine on the total number of active duty service members diagnosed with PTSD from 2005 to 2012. The report also analyzed the types of providers diagnosing PTSD, daily average encounters by provider, and the types of clinics at which they were diagnosed.	
	PTSD and TBI in Women Provided the number of incident cases of PTSD and TBI among active duty Navy females from 2008 to 2014. This information was part of a request from the Congressional Research Services.	
	Washington Navy Yard Support Delivered consultation support to Commander, Naval Installation Command, Naval Sea Systems Command, and the Washington Navy Yard Task Force to provide MHAs for those workers and military affected by the shooting event in 2013. Developed a PDF version of the MHAs for easy access and submission by the members.	
	Deployment Health Working Groups Served on the DoD/Veterans Affairs (VA) Respiratory Injury Registry, DoD Individual Longitudinal Exposure Record, and the DoD/VA Airborne Hazards working groups, studying deployment-related exposures effects on service members' health.	
Medical Injuries Reports	Motor Vehicle and Motorcycle Injury Analysis Supported the Headquarters Marine Corps Safety Division by providing an analysis of injuries due to motor vehicle and motorcycle accidents for 2012-2013.	Supplied analytic data reports to evaluate and target prevention efforts and to assess the extent and types of injuries experienced by service members and treated by Navy Medicine. Developed analytical surveillance reports to assess TBI burden and incidence concerning Sailors and Marines.
	Limited Duty Metric Provided coding and methodology to BUMED M8 for the Limited Duty Metric.	
	Navy and Marine Corps Theater Injury Retrospective Report (2008-2013) Identified the types and severity of musculoskeletal injuries experienced by non-shipboard Navy personnel deployed in the U.S. Central Command theaters of operation. The report described injuries by occupational areas.	
	Marine Self-Reported Blast Exposure Report Delivered a report to the Marine Safety Center summarizing self-reported blast exposures among USMC on the PDHA.	

Focus Area	Key Product	Returns/Outcomes
Medical Injuries Reports <i>(continued)</i>	TBI Identified in PDHA Line List Identified TBIs among I Marine Expeditionary Force (MEF) Marines based on screening results from the PDHA.	Supplied analytic data reports to evaluate and target prevention efforts and to assess the extent and types of injuries experienced by service members and treated by Navy Medicine. Developed analytical surveillance reports to assess TBI burden and incidence concerning Sailors and Marines.
	Incidence of Legionnaires' Disease at Camp Lemonnier, Djibouti, Africa, 2008-2014 Developed a report for Preventive Medicine to identify all medical encounters with a diagnosis of Legionnaires' Disease at Camp Lemonnier, Djibouti.	
Suicide	OPNAV N171 Suicide Case Review Conducted an annual suicide case review and provided analytical support for OPNAV N171 for suicide data analysis; requested by BUMED.	Completed suicide analysis; used reports to identify risk factors and prevention approaches for suicide vulnerability and ideation among WII service members.
	II MEF Suicide Review, 2013 and 2014 Developed reports detailing health encounter, pharmaceutical, health assessment, and chemistry data among II MEF Marines.	
	Navy Suicide Attempts and Completed Suicides Created reports providing detailed analyses of medical encounters, prescriptions, health assessment responses among suicide attempts, and completed suicides.	
	Mental Health among Marine Intercept Program Analyzed the healthcare utilization of active duty Marines enrolled in the Marine Intercept Program, a program developed by the USMC Behavioral Health Group to assist service members with suicide attempt or ideation by providing support and guidance. Report assessed healthcare utilization and most frequent diagnoses in comparison to two similar cohorts.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT HEALTH ANALYSIS

HEALTH ANALYSIS

The HA Department helps Navy Medicine improve healthcare for WII Sailors and Marines by analyzing areas for cost efficiency, assessing process variation in clinical practices, and evaluating

the quality of healthcare services. In FY14, HA received positive recognition from DoD and federal agencies for the products and services listed below.

Focus Area	Key Product	Returns/Outcomes
Suicide	OPNAV N171 Suicide Case Review Conducted an annual suicide case review for OPNAV N171 and provided analytical support to evaluate existing programs, determine opportunities for interventions, and assess data quality. The results will inform healthcare leaders and policy makers on program effectiveness and potential interventions.	Delivered analytic support for Navy suicide studies that directly informed healthcare leaders and policy makers on program effectiveness and potential interventions to prevent suicide.
Behavioral and Mental Health	Behavioral Health Integration Program - Medical Home Port Evaluation Evaluated metric design, data collection, and statistical analysis for the Behavioral Health Integration Program in support of BUMED M9.	Provided BUMED M9 insight into the effectiveness of behavioral health services and ways to enhance coding practices and improve impact.
	Program Evaluation Plan for BUMED M9/NH Beaufort's RESPECT-Mil Program Supported BUMED M9 and NH Beaufort by providing an evaluation plan and recommendations to enhance coding practices to improve analysis and assess the impact of the Re-Engineering Systems of Primary Care Treatment in the Military (RESPECT-Mil) program.	
Domain Metrics Assessments	Access to Care (ATC) Quarterly Reports Provided reports with analysis and trending results on mental healthcare access and clinical care efficiency metrics for the WII population.	Developed reports detailing outcomes and trends in ATC, QOC, and TOC from FY09 to present. Enabled BUMED M9 leadership to make efficient, data-driven decisions related to staffing, resources, and facility performance that reduce inefficiencies across the enterprise and ensure access to vital mental health services for all Navy beneficiaries.
	Quality of Care (QOC) Quarterly Reports Assessed adherence to clinical practice and coding guidelines for PTSD and Substance Use Disorder (SUD).	
	Transition of Care (TOC) Quarterly Reports Evaluated compliance to the DoD coding guidance for CM services, implemented in 2009, to support quality improvement efforts. Metrics indicate significant improvements in the documentation of CM workload across Navy Medicine as a result of the collaboration between BUMED M9, BUMED M3, and HA on targeted education efforts to MTFs.	
BUMED M9 Appointed WII Project Evaluations	WII Program Evaluations Conducted a rapid program evaluation to analyze qualitative and quantitative data sources and evaluate the following domains: overlap and redundancy, organizational alignment, fiscal efficiency, and impact and outcomes. Provided findings for Flag leadership to guide resource allocation decisions that resulted in seven million dollars of future cost savings.	Contributed expertise in study methodology and metrics development to assist with quarterly reporting and analysis for nine WII projects under the ATC and QOC domains. Improved data quality and collection allowed BUMED M9 to assess project effectiveness and improvements in ATC and QOC.
	Comprehensive Aesthetic Restorative Effort (Project CARE) (WII Project #163 and #163A)	
	Orofacial Pain Position (WII Project #W166)	

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Focus Area	Key Product	Returns/Outcomes
BUMED M9 Appointed WII Project Evaluations (continued)	Navy Medicine's Reintegration and Education Program (WII Project #W184)	Contributed expertise in study methodology and metrics development to assist with quarterly reporting and analysis for nine WII projects under the ATC and QOC domains. Improved data quality and collection allowed BUMED M9 to assess project effectiveness and improvements in ATC and QOC.
	Wounded Warrior Psychological Health Recovery (WII Project #W186)	
	Naval Health Clinic New England TBI Program (WII Project #W190)	
	Naval Medical Center San Diego Medical and Surgical Simulation Training Center (WII Project #W207)	
	Functional Recovery Program for PTSD and TBI in NH Jacksonville (WII Project #226)	
	NH Jacksonville Wounded Warrior Rehabilitation Program (WII Project #W230)	
	Deputy Officer in Charge, Operational Forces Medical Liaison (WII Project #W231)	
Healthcare Utilization and Needs Assessments	Military Health System (MHS) 90-day Review for U.S. SECDEF Led the analytics cell that comprised 20 people from all 3 services and the Defense Health Agency (DHA) to ensure the comprehensiveness and integrity of the MHS review. The cell provided continuity and structure for the analyses conducted across three working groups assessing ATC, QOC, and safety of care in the MHS. HA delivered expertise in qualitative and quantitative analysis, MHS data expertise, data visualizations, and rapid summarization of findings. The analysis identified MHS areas of improvement to inform resource allocation and prioritization.	Developed standard evaluation metrics to allow the assessment of programs and healthcare across the enterprise. Conducted data analyses and completed reports to identify MTFs that require additional resources to care for WII service members. Provided insight into reducing Emergency Department (ED) expenses to improve ATC and QOC and program impact.
	Sleep Study Referral Tool Developed and launched an evidence-based Sleep Study Referral Tool on the NMCPHC website in April 2014. This tool, implemented by Naval Medical Center Portsmouth (NMCP) in November 2013, guides providers in evaluating sleep pathology and resulted in a 100% active duty referral recapture and a purchased care monthly cost avoidance of \$400,000.	
	mTBI Needs Assessments Completed an assessment of the mTBI burden at Navy MTFs in FY06-FY13, focused primarily on active duty Sailors and Marines. Enabled BUMED M9 to identify MTFs in need of additional resources to support wounded warrior care.	
	Periodic Health Assessment (PHA) Tasker Responded to a BUMED M3 tasker to analyze and report on all active duty tri-service members receiving a PHA and the associated healthcare visits. Informed the development cost estimates for providing these services to active duty personnel.	
	No-Show Mental Health Appointment Report for NMCP Adult Mental Health Clinic Provided a descriptive analysis of patient demographics and related appointment trends for the NMCP adult mental health clinic that guides resource allocation and efforts to reduce the no-show rates and improve mental healthcare.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT
HEALTH ANALYSIS

Focus Area	Key Product	Returns/Outcomes
Healthcare Utilization and Needs Assessments <i>(continued)</i>	Marine Centered Medical Home (MCMH) Preliminary Evaluation of Kept Referral Appointments and Wait Times Analyzed kept referral appointments and wait times at six pilot MCMH sites and their corresponding parent MTF to examine trends prior to the implementation of MCMHs as well as differences in these measures between MCMH enrollees and three non-MCMH enrollee categories.	Developed standard evaluation metrics to allow the assessment of programs and healthcare across the enterprise. Conducted data analyses and completed reports to identify MTFs that require additional resources to care for WII service members. Provided insight into reducing ED expenses to improve ATC and QOC and program impact.
	Children's Mental Health and Deployment Effects Report Assessed behavioral healthcare utilization and trends in mental health diagnoses among children of active duty Sailors and Marines in relation to parental deployment history. Developed for the BUMED M9 Director of Family Programs Division to guide program planning and resource allocation.	
	NHCL WII Provider Analysis Examined the impact of hiring providers at NHCL to improve ATC for the WII population. Provided targeted analyses for individual MTFs to evaluate the impact of WII funding at the MTF level.	
	MCMH and Operational Forces ED Utilization Analyzed MCMH ED utilization for 2013 to examine the number of visits, location of services, and chief complaint diagnoses among MCMH enrollees, non-MCMH enrollees, and corresponding Operational Forces enrollees. Allowed BUMED M3 to evaluate the impact of MCMH program by comparing the ED utilization prior to the program implementation.	
	ED Utilization for Tidewater Operational Forces Assessed utilization patterns between Tidewater Navy active duty Operational Forces Unit Identification Codes (UIC) to support the U.S. Fleet Forces Command (USFF) Fleet Surgeon's Office, Norfolk, in setting utilization goals within Operational Forces and assessing ED utilization performance among Operational Forces UICs. Provided ED Utilization Brief to the Tidewater Medical Coordination Council with the intent of improving QOC and ATC with reduced costs.	
	Emergency Medical Service (EMS) Utilization and Cost Analyzed EMS transport utilization and cost among DoD beneficiaries, the first time the MHS explored EMS transport data at this level. Provided BUMED M3 with EMS information to guide policy development.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT HEALTH ANALYSIS

Focus Area	Key Product	Returns/Outcomes
Substance Use Disorders and Tobacco Cessation	Drug Demand Reduction Project Examined data spanning from FY09 to FY13 to provide detailed and comprehensive information on the rate and distribution of commonly abused prescription drugs within the Navy and Marine Corps active duty and active reserve populations. Aided the ASN (M&RA) in overseeing fleet resources, policy, direction, and readiness to ensure appropriate resource allocation for drug demand reduction and related programs.	Conducted data analysis and implemented metrics to assess and reduce substance abuse and tobacco use rates – two health behaviors that directly impede recovery among WII service members. Implementation of these metrics across the MHS will ensure coordinated tobacco cessation efforts.
	FY13 Mental Health Substance Abuse (MHSA) Report Conducted a comprehensive analysis of MHSA encounters across inpatient, outpatient, and ED settings to assess significant clinical and business operational differences across these patient populations. Detailed associated costs of MHSA care, as well as medication and appointment compliance within Navy Medicine for both direct care and purchase care contexts.	
	Hospital Bed Days for SUDs Report for BUMED M9 Analyzed inpatient bed days related to substance abuse within the purchased care system among Sailors and Marines during FY11-FY13 including time trend analyses and categorical breakouts of bed days per FY and service. Assessed the QOC over time and differences in visit durations between patient populations.	
	Tobacco Cessation Metrics Analyzed three tobacco cessation metrics developed by HA that are based on clinical practice guidelines for treating tobacco use and dependence and aim to standardize Navy Medicine's diagnosis process and documentation in patient records. BUMED M3 uses the information in Medical Home Port briefs to help MTFs manage evidence-based recommendations related to tobacco use. The Clinical Enterprise Intelligence Analytic Work Group recently endorsed these metrics for use across the MHS to evaluate tobacco cessation efforts throughout the services.	

WII 141A Project: Health Promotion and Wellness

The Health Promotion and Wellness (HPW) Project develops innovative and evidence-based health promotion resources to facilitate readiness and resilience, prevent illness and injury, hasten recovery, and promote lifelong healthy behaviors among those who are wounded, ill, or injured. During FY14, the HPW Department expanded programs and educational materials for WII

service members, their families, caregivers, healthcare providers, and case managers who support and assist WII members during the recovery and transition process. The tables below outline these programs and resources to promote and sustain healthy lifestyle behaviors.

Focus Area	Key Product	Returns/Outcomes
New HPW WII Resources	WII Website Redesign Completed a comprehensive redesign and overhaul of the WII website and its 26 sub-pages to distinguish HPW as the go-to resource for WII-related HPW resources. Consolidated sub-pages to 15 topics to improve alignment with critical issues facing WII stakeholders and provided easier navigation, consistent branding, and improved design for a wide variety of audiences.	Developed specific messaging, resources, and tools to provide a holistic campaign that addresses the needs of the WII Population in each HPW topic area. Educated WII service members, their families, and their caregivers, and facilitated discussion between WII service members and medical providers on modifying risks and improving health behaviors. Resources position NMCPHC as the go-to resource among health information disseminators for WII HPW materials and information.
	WII Resources and Materials Created comprehensive resources with practical and promotional purposes for WII service members, caregivers, and healthcare providers to better support health promotion needs of those recovering from a wound, illness, or injury. Developed over 100 new resources (e.g., infographics, guides, fact sheets, posters, and brochures) to improve the usefulness of the WII website and address gaps in information and materials on a wide variety of topics to include sleep, nutrition, and relationships and intimacy.	
	WII Toolbox Developed a virtual toolbox with promotional tools to help health educators, providers, and case managers reach the WII audience and practical tools to equip WII service members in their daily battle for healing and recovery. Toolbox topics include depression, nutrition, sleep, relationships and intimacy, integrative and complementary medicine, and caregiver support.	
	WII Campaign Materials Developed customized brochures, fact sheets, and posters to promote wellness and facilitate readiness among the WII population in the Navy and Marine Corps. Materials are based on the HPW general campaign topics and contain specific messaging and images tailored to the WII population. Topic areas include active living, injury and violence free living, healthy eating, tobacco free living, pain management, psychological and emotional well-being, substance use and abuse, relationships and intimacy, weight management, and HPW for WII Overall.	

WII 141A PROJECT:
HEALTH PROMOTION AND WELLNESS

Focus Area	Key Product	Returns/Outcomes
Stakeholder Outreach	Partnership Program Continued to engage and establish partnerships with organizations focused on HPW-related missions to increase the promotion of HPW campaign messages with target audiences. Delivered turnkey materials and information to help support partners with quick, easy, and inexpensive outreach. Confirmed partnerships include MHS/Operation Live Well, Naval Health Research Center, OPNAV N171 (Navy Suicide Prevention Program), and Navy Wounded Warrior - Safe Harbor Mid-Atlantic Region (N95).	Provided the latest WII-focused messages and educational materials virtually to Navy and Marine Corps personnel worldwide on a variety of topics that help address the needs of the wounded, ill, or injured. Collaborated with partners to increase the awareness and use of WII products, materials, and services among active duty, reserve, and retired WII service members, their families, and caregivers.
	Social Media Created and shared over 80 WII-targeted messages on the NMCPHC Facebook and Pinterest pages and the BUMED Twitter feed to provide information and tips to promote health and resilience. Topics of messaging included resilience, stress, PTSD, injury prevention, tobacco, caregivers, and fitness.	
	HPW Resources to Assist WII Sailors and Marines with Traumatic Amputations Report Promoted the report to increase awareness of HPW resources for use during the early phase of treatment and rehabilitation of WII service members with traumatic amputations. Channels included stakeholder emails, BUMED MedNews article, social media messages, and articles in HPW Friday Facts, NMCPHC Quarterly Newsletter, HPW Partnership Outreach Newsletter, and NMCPHC Quick Hits. In addition, HPW collaborated with Naval Health Research Center and Naval Medical Center San Diego to promote available resources for service members with amputations via two blog posts on Navy Medicine Live.	
Data Gathering and Analysis	Organizational Analysis of WII Programs Evaluated DoD and DON organizations with HPW resources that address WII-specific topic areas to identify existing resources and services available for Navy and Marine Corps service members. Findings indicated that NMCPHC is one of the most comprehensive health promotion programs serving WII Sailors and Marines.	Analyzed the gaps, redundancies, and needs for WII-specific resources across HPW topic areas, identified opportunities for collaboration or partnership, and examined the communication and educational needs of the WII population. Development of HPW resources help WII members recover and reintegrate to achieve optimal level of functioning and improved quality of life.
	Rapid Literature Review Completed a rapid assessment of WII literature to ascertain available research and identify gaps in research surrounding the health issues specific to WII Sailors and Marines. Review guided the development of NMCPHC HPW WII-specific information, materials, and dissemination tactics that align with existing HPW Campaign topics as well as the focused efforts on nutrition and relationships and intimacy, and the WII website redesign.	

WII 141A PROJECT:
HEALTH PROMOTION AND WELLNESS

Focus Area	Key Product	Returns/Outcomes
Focused Educational Resources	Nutrition for Healing Materials Developed evidence-based resources focused on nutrition including topics such as nutrition for healing, supplements, and hydration. Products include multiple sets of ready-to-use webinar slides, accompanying webinar facilitator guides, and other resources such as fact sheets.	Developed educational materials and resources that enhanced prevention efforts and help WII service members understand the importance of nutrition and ways to maintain relationships and intimacy. Also created materials for caregivers and providers to address relationships and intimacy.
	Relationships and Intimacy Materials Developed evidence-based resources focused on relationships and intimacy including topics such as social relationship/social interaction, managing emotions, and managing relationships at work as well as provider education materials on the patient support system, socialization, and isolation. Products include a brochure on social relationship/social interaction, an emoticon/graphic with tips on managing emotions, a fact sheet on managing relationships at work, and three handbooks on social isolation for three target audiences to include providers, caregivers, and service members.	

WII 141B Project: Health Hazard Assessment

The Health Hazard Assessment (HHA) Project analyzes occupational and environmental health surveillance data to conduct technically sound and scientifically defensible health hazard assessments that report to leadership the potential health risks associated with military deployments. The project also increases Forward Deployable Preventive Medicine Unit (FDPMU) readiness through the refinement of FDPMU field sampling protocols. These protocols allow the deployable teams to assist

commanders in minimizing environmental exposures through the timely implementation of controls and provide recommendations for risk-based decisions about environmental exposures. The services and products outlined in the tables below directly support the development of Navy Preventive Medicine programs that identify, evaluate, and monitor diseases, injuries, and environmental factors that threaten human health.

Focus Area	Key Product	Returns/Outcomes
Periodic Occupational and Environmental Monitoring Summary (POEMS)	Camp Lemonnier POEMS Updated POEMS to evaluate the health risks associated with environmental stressors experienced by deployed personnel at Camp Lemonnier.	Employed skill sets and executed analytical processes to evaluate environmental data collected from site assessments, environmental samples, and healthcare encounters. POEMS assess the significance of both short-term and long-term health risks for populations deployed to specific sites and improve population health surveillance. POEMS can be used to provide defensible, definitive assessments of deployment-related environmental exposures to military public health personnel and healthcare providers, including those from the VA and civilian sector.
	Forward Operating Base (FOB) Al-Qayyarah West POEMS Collected data to evaluate health risks at FOB Al-Qayyarah West and three satellite camps in Iraq. Analysis and additional surveillance not completed due to retirement of the lead analyst.	
	FOB Geronimo (FOB Hanson, FOB Marjah, and Fire Base Fiddlers Green) POEMS Collected data and validated update of follow-on surveillance data to evaluate the health risks at FOB Geronimo, FOB Hanson, FOB Marjah, and Fire Base Fiddlers Green.	
	Combat Outpost (COP) Koshtay, COP Sharp, Patrol Base (PB) Amir, and PB Gorgak POEMS Collected data and validated update of follow-on surveillance data to evaluate the health risks at COP Koshtay, COP Sharp, PB Amir, and PB Gorgak.	
	FOB Hit and FOB Haditha POEMS Collected surveillance data to evaluate the health risks at FOB Hit and FOB Haditha.	
	Camp Dwyer POEMS Validated and updated POEMS to evaluate and characterize health risks at the population level for deployed personnel at Camp Dwyer and 14 satellite camps in Afghanistan.	
Proficiency Analytical Testing	Proficiency Analytical Testing (PAT) Completed 162 PATs for FDPMU teams East and West during FY14 including 55 PATs for HAPSITE Gas Chromatograph/Mass Spectrometer, 53 PATs for the HazMatID 360 Chemical Identification System, and 54 PATs for DR2800 Portable Spectrophotometer. The PAT round project ensures FDPMUs are capable to deploy modern field-portable analytical equipment proficiently in different areas.	Certified analytically proficient healthcare scientists to identify, assess, and control personnel exposures to environmental health stressors in the expeditionary environment.

WII 141C Project: Navy Entomology Center of Excellence

Control programs aimed at decreasing insect populations provide lasting, positive impact on warfighters and at-risk populations. The Navy Entomology Center of Excellence (NECE) serves as an international authority on effective ways for safeguarding human life from blood-feeding insects that carry human disease. The NECE WII Project continues to make significant advancements in the development of new and improved insecticides and application equipment and techniques, enhancing the health and operational

readiness of service members by improving the safety and effectiveness of control programs. The tables below outline these achievements in safeguarding warfighters and at-risk populations.

Focus Area	Key Product	Returns/Outcomes
International Recognition	World Health Organization Collaborating Center (WHO CC) Recommended as a WHO CC for testing and evaluation of insecticide application equipment, NECE now serves as the only international center of excellence for how public health insecticides are applied. Participated in the WHO's Global Collaboration for the Development of Public Health Pesticides meeting to discuss the prevalence of insecticide resistance by mosquito populations with 60 international experts representing governmental agencies, regional and international organizations, university/research institutions, and industry from 20 countries. This increased understanding of current capability gaps and opportunities to coordinate with the international community to develop policy, training, and material solutions through these collaborative projects.	Established collaborative research efforts with new national and international federal labs, universities, and industries to produce and improve products that protect deployed war fighters from insects that transmit diseases and develop new collaborative initiatives that help promote global health, a key national security priority for the DoD and Navy. NECE received requests from the WHO to test new insecticides that kill insects in aircraft transiting international commercial airports and from two international chemical companies to test insecticides. The WSJ story generated multiple inquiries to test commercially available products and led to additional collaborations with experts at the ManTech International Corporation and a civilian pest control firm.
	Structured Outreach Increased awareness of NECE capabilities, products, and services through publications in media outlets as a direct result of the work supported by WII. These included a front-page article in the <i>Wall Street Journal (WSJ)</i> entitled, "In Florida, Navy Lab Plans Attacks on Creepy Invaders: Center Tests Weapons to Battle Bugs", an article in the <i>Florida Times Union</i> entitled, "Bug wars waged quietly at NAS: Blood and guts take on new meaning at entomology center", and a broadcast story on <i>FOX News 35</i> (Orlando, FL) entitled, "Navy looks for better weapons against bugs at Florida base."	

Focus Area	Key Product	Returns/Outcomes
Testing and Evaluation	Development of Revolutionary Sprayer to Generate a Cloud of Small Insecticide Droplets (5 Microns) Using Sound Vibrating Technology Discovered an innovative application method using a novel sprayer that generates a cloud of electrostatically charged small droplets using vibrating sound. These negatively charged droplets are attracted to the positive static charge of a flying mosquito. This greatly increases the effectiveness of the spray while reducing the amount of insecticide needed. Developed portable, electrostatic equipment to produce aerial fogs of insecticide applications that provides a safe, nearly silent tool ideal for deployed military scenarios. NECE awarded three patents through related research and development.	Discovered and tested insecticides and application methods to increase the effectiveness of control programs during military and humanitarian assistance operations worldwide and protect service members from diseases in expeditionary environments. Evaluated insecticide application equipment against military-specific requirements and validated manufacturers' claims and efficacy results for DoD and global users. No one else provides this service anywhere in the world. NECE incorporates new data into the existing Vector Spray mobile app used worldwide, which stakeholders downloaded several hundred times in FY14. This results in the standardization of equipment and application techniques based on the best possible technology.
	Establishment of NECE facility at Camp Blanding Joint Training Center Finalized a formal memorandum of understanding with the Florida Army National Guard (FLANG) to occupy permanent facilities at the FLANG Camp Blanding Joint Training Center (CBJTC) granting NECE access to ideal facilities and secure test sites (76,000 acres). Exemplified the effectiveness of joint cooperation with military and federal agencies and optimized opportunities to evaluate novel vector-control chemicals, equipment, and techniques in a field setting to ensure effectiveness and adherence to DoD requirements. Strengthened a productive and ongoing relationship with the FLANG and the joint effort led to CBJTC placing second in the overall Army Environmental Award. Received praise from FLANG's Commanding General and the CBJTC's base commander for NECE's on base activities to protect visiting Army and Marine Corps deploying units from biting insects.	
	U.S. President's Malaria Initiative Project Assistance Collaborated with the Centers for Disease Control and Prevention (CDC) and FLANG, Camp Blanding in support of the President's Malaria Initiative (PMI) to examine the effectiveness of applying insecticides indoors to control malaria-carrying mosquitoes in Africa. Served as the permanent field test site for all products used by the PMI to inform the execution of successful malaria control programs.	
	Establishment of Mosquito Colony Resistant to Pyrethroid (insecticide compound) Established a pyrethroid-resistant <i>Aedes aegypti</i> (yellow fever mosquito) colony used for evaluating novel compounds with unknown modes of action (how it affects the insect). Conducting toxicology screening on mosquitoes with known resistance mechanisms determines if the novel compounds have modes of action that differ from pyrethroids as well as its effectiveness against wild-type resistant populations.	
	Development of a Sand Fly Bottle Assay Evaluated five insecticides (permethrin, deltamethrin, propoxur, malathion, and DDT) in sand fly bottle bioassays, based on the CDC bottle bioassay, designed to determine if a particular formulation is able to kill an insect. Suppression of sand fly population is critical to protecting deployed war fighters in Iraq from leishmaniasis and sand fly fever.	

WII 141C PROJECT:
NAVY ENTOMOLOGY CENTER OF EXCELLENCE

Focus Area	Key Product	Returns/Outcomes
Testing and Evaluation <i>(continued)</i>	Assessment of Insecticide-Treated Tent Material Against Mosquitoes, Sand Flies, and Filth Flies Evaluated the efficacy of several insecticides applied to camouflage netting, which is widely used during contingency operations and provides an ideal surface to apply a residual insecticide barrier. Netting samples are collected and returned to the laboratory for bioassays using <i>Culex quinquefasciatus</i> (mosquitoes that transmit filariasis and numerous viruses), <i>Stoyomoxys</i> spp. (blood-feeding fly), and house/filth flies (transmits disease causing agents). Insecticide application as a residual barrier treatment is an extremely effective technique to reduce personnel contact with disease-carrying insects.	Discovered and tested insecticides and application methods to increase the effectiveness of control programs during military and humanitarian assistance operations worldwide and protect service members from diseases in expeditionary environments. Evaluated insecticide application equipment against military-specific requirements and validated manufacturers' claims and efficacy results for DoD and global users. No one else provides this service anywhere in the world. NECE incorporates new data into the existing Vector Spray mobile app used worldwide, which stakeholders downloaded several hundred times in FY14. This results in the standardization of equipment and application techniques based on the best possible technology.
	Characterization of Aerial Spray Systems for the Control of <i>Aedes aegypti</i> Indoors Evaluated the efficacy of aerial applications of the insecticide Dibrom to control <i>Aedes aegypti</i> (mosquito transmits dengue fever) in collaboration with the U.S. Department of Agriculture, Agriculture Research Service, Center for Medical, Agriculture and Veterinary Entomology (USDA-ARS-CMAVE), Air Force 757th Airlift Squadron, and FLANG CBJTC.	
	Comparison of Ultra Low Volume (ULV) and Thermal Fog Applications Collaborated with the Walter Reed Army Institute of Research to test the effectiveness of ULV backpack and thermal foggers in controlling mosquitoes within a sub-tropical environment. Effective techniques from this multi-seasonal study will be field tested in Thailand next season. Study will improve application methods for controlling mosquitoes in a military contingency environment by characterizing droplet spectrum to determine the amount of pesticide needed and evaluating the effectiveness in eliminating larval and adult mosquitoes.	
	Assessment of Compounds from USDA-ARS-CMAVE Chemical Archives for Insecticidal Activity Conducted toxicological screening on adult and larval mosquitoes using compounds submitted by several sources (including Vestergaard Frandsen, Marrone Bio Innovations, Chemtura, BASF, and Bayer) which resulted in improvements to existing products and discoveries of additional public health uses of compounds currently used for agricultural purposes. Discovery of new compounds will increase the effectiveness of control programs, particularly of insects resistant to pesticides already in use.	
	Pesticide Application Equipment Annual Evaluation 2014 Hosted an annual week long symposium for manufacturers of insecticide dispersal equipment to demonstrate new products and technology. After testing, manufacturers were debriefed, providing opportunity for discussion on evaluation results, potential modifications, and development of future technology. NECE field-tested 10 new commercial sprayers from 6 commercial manufacturers offered for sale to the U.S. and for global use for suitability and durability.	

Focus Area	Key Product	Returns/Outcomes
Novel Control Techniques	Ribonucleic Acid (RNA) Constructs to Prevent/Suppress Egg Laying in Mosquitoes Discovered two double-stranded RNA constructs that reduce or prevent egg laying (oviposition) by over 93% in female mosquitoes that transmit yellow fever and dengue. These RNA control tools have no known toxicity to vertebrates and will not require the lengthy and expensive Environmental Protection Agency registration if developed further as a pesticide product. Currently testing is also underway to determine application functionality against other mosquitoes as well as other pest species like fire ants and flies. These promising results led to a peer review publication and a patent submission for which the potential licensing will be very profitable to the Navy.	Insect resistance to currently used insecticides is a significant problem facing preventive medicine and public health personnel deployed around the world. Improved pesticide application methodologies and formulations ensure personnel that support warfighters have the latest and most effective tools available.
	Ribonucleic Acid Interference (RNAi) Insect Cuticle Penetration Study In collaboration with USDA-ARS-CMAVE, examined factors that affect the penetration of various solvents into the insect skin (cuticle) to determine the most effective way for an RNAi insecticide to pass through the cuticle and deliver the toxicant. Developed and evaluated numerous formulations and began testing a promising formulation using a fluorescent RNAi construct. The RNAi insecticide makes it impossible to develop resistance and only affects the targeted insect ensuring it is very safe for human use. These RNAi insecticides exist in agriculture however, rely on ingestion by the insect. This method would work on flying mosquitoes similar to liquid insecticide, providing an innovative public health insecticide that could reap large profits from licensing the patent. Our consortium holds the only patent for use against mosquitoes.	
	Evaluation of RNAi to Reverse Insecticide Resistance in Mosquitoes Continued to evaluate the effectiveness of RNAi constructs targeting specific genes that make mosquitoes resistant to pesticides without affecting non-targets and causing resistance or species-specific effects. If these resistance genes are knocked down, the mosquito should become susceptible to commonly used pesticides, which makes an already approved pesticide more useful and extends its effective period of use. Developing an insecticide that specifically targets and silences insect genes responsible for insecticide resistance would be an extremely effective and specific control strategy.	
	Determination of neuropeptide hormones and receptors in mosquitoes and sand flies Identified, cloned, sequenced, and expressed pheromone biosynthesis activating neuropeptides and diapause hormone receptors in <i>Aedes aegypti</i> (mosquitoes) and currently executing the same work in <i>Phlebotomus papatasi</i> (sand flies). Attacking the insect neuropeptide system with one mRNA transcript affects several different hormones and physiological processes resulting in the insect's death. While still in the early stages of discovery, this study aims to create either a small molecule or RNAi antagonist that will cause wide-ranging effects on the survivability of the different mosquito species and the sand fly in deployed environments.	

Appendix B: Contact Information - NMCPHC WII Program

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Appendix C: Acronym List

Acronym	Definition
ASN (M&RA)	Assistant Secretary of the Navy, Manpower and Reserve Affairs
ATC	Access to Care
BUMED	Bureau of Medicine and Surgery
CARE	Comprehensive Aesthetic Restorative Effort
CBJTC	Camp Blanding Joint Training Center
CDC	Centers for Disease Control and Prevention
CM	Case Management
COP	Combat Outpost
DHA	Defense Health Agency
DoD	Department of Defense
DON	Department of the Navy
ED	Emergency Department
EDC	EpiData Center
eDHA	Electronic Deployment Health Assessment
EMS	Emergency Medical Service
FDPMU	Forward Deployable Preventive Medicine Unit
FLANG	Florida Army National Guard
FOB	Forward Operating Base
FY	Fiscal Year
HA	Health Analysis
HHA	Health Hazard Assessment
HPW	Health Promotion and Wellness
IDES	Integrated Disability Evaluation System
M3	BUMED Medical Operations Code
M8	BUMED Comptroller and Resource Management Code
M9	BUMED Wound, Ill, and Injured Code
MCMH	Marine Centered Medical Home
MDD	Major Depressive Disorder
MEB	Medical Evaluation Board
MEF	Marine Expeditionary Force
MHA	Mental Health Assessment
MHS	Military Health System
MHSA	Mental Health Substance Abuse
MORE	My Ongoing Recovery Experience
mTBI	Mild Traumatic Brain Injury
MTF	Medical Treatment Facility
NECC	Navy Expeditionary Combat Command

Acronym	Definition
NECE	Navy Entomology Center of Excellence
NH	Naval Hospital
NHCL	Naval Hospital Camp LeJeune
NHRC	Naval Health Research Center
NMCP	Naval Medical Center Portsmouth
NMCPHC	Navy and Marine Corps Public Health Center
NMCSD	Naval Medical Center San Diego
OPNAV	Office of the Chief of Naval Operations
PAT	Proficiency Analytical Testing
PB	Patrol Base
PDHA	Post-Deployment Health Assessment
PDHRA	Post-Deployment Health Reassessment
PHA	Periodic Health Assessment
PMI	President's Malaria Initiative
POEMS	Periodic Occupational and Environmental Monitoring Summary
PTSD	Post-Traumatic Stress Disorder
QOC	Quality of Care
RESPECT-Mil	Re-Engineering Systems of Primary Care Treatment in the Military
RNA	Ribonucleic Acid
RNAi	Ribonucleic Acid Interference
SECDEF	Secretary of Defense
SUD	Substance Use Disorder
TBI	Traumatic Brain Injury
TOC	Transition of Care
UIC	Unit Identification Code
ULV	Ultra Low Volume
U.S.	United States
USDA-ARS-CMAVE	U.S. Department of Agriculture, Agriculture Research Service, Center for Medical, Agriculture and Veterinary Entomology
USFF	U.S. Fleet Forces Command
USMC	United States Marine Corps
VA	Veterans Affairs
WII	Wounded, Ill, and Injured
WHO CC	World Health Organization Collaborating Center
WSJ	Wall Street Journal
WTP	Warrior Transition Program



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