

Colorado Springs, Colo., native, Capt. Jonathan Disbro, a Wounded Warrior with the West Team, waits to begin the 100 meter race during the 2012 Marine Corps Trials, hosted by the Wounded Warrior Regiment, at Marine Corps Base Camp Pendleton, California. Wounded Warrior Marines, veterans and allies are competing in the second annual trials, which include swimming, wheelchair basketball, sitting volleyball, track and field, archery and shooting. (Photo by Sergeant Mark Fayloga)



# Wounded, Ill, and Injured Project FY2015 Annual Report

Public Health Support for Our Nation's Warriors



**NAVY AND MARINE CORPS PUBLIC HEALTH CENTER**

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### **Wounded, Ill, and Injured Project FY2015 Annual Report**

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# Table of Contents

Message from the Commanding Officer.....	ii
Dedication.....	1
Executive Summary.....	2
Navy and Marine Corps Public Health Center (NMCPHC) WII Program Description and Strategic Alignment .....	3
Overview of WII 141 Project: Expanded Surveillance and Metrics Support, EpiData Center.....	6
Overview of WII 141 Project: Expanded Surveillance and Metrics Support, Health Analysis.....	7
Overview of WII 141C Project: Navy Entomology Center of Excellence.....	8
The Mission Ahead for NMCPHC .....	9
Appendix A: Products and Services Compendium.....	10
WII 141 Project: Expanded Surveillance and Metrics Support.....	10
WII 141 Project: Expanded Surveillance and Metrics Support, EpiData Center.....	11
WII 141 Project: Expanded Surveillance and Metrics Support, Health Analysis .....	16
WII 141C Project: Navy Entomology Center of Excellence.....	19
Appendix B: Contact Information - NMCPHC WII Program.....	21
Appendix C: Acronym List.....	22



## Message from the Commanding Officer



**Captain Scott R. Jonson**  
Commanding Officer, NMCPHC

In response to a request received in FY10 from the United States Navy's Bureau of Medicine and Surgery (BUMED), the Navy and Marine Corps Public Health Center (NMCPHC) established its Wounded, Ill, and Injured (WII) Program to address the health needs of our warfighters across the continuum of care. Since its commencement, the program has evaluated the health and associated needs of WII Sailors and Marines, identified and monitored their injuries and illnesses, and assessed the care they receive throughout the deployment cycle. It has become a reliable resource for Navy Medicine, helping leadership across the Navy and Marine Corps make data-driven decisions on policies, procedures, and practices that help prevent and treat illness and injury.

What started as a "special project" for NMCPHC has grown into a well-established program designed to protect and restore the physical and psychological health of our deserving Sailors and Marines. Through our staff's innovation, creativity, and hard work, we have successfully produced resources that focus on improving the health and well-being of our service members. NMCPHC's WII Program, funded on a year-to-year basis, has now become part of NMCPHC's overall enduring mission. The program has enhanced our core capabilities in health surveillance and metrics support, and the testing and evaluation mission of the Navy Entomology Center of Excellence (NECE), which is one of our 10 outlying activities.

I am pleased to share our *NMCPHC Wounded, Ill, and Injured Project FY15 Annual Report*. The report details the achievements and outcomes of our WII products and services. For example, in FY15, we:

- ▶ Captured over 90,000 deployment health assessments to provide ongoing, multifaceted surveillance reporting for service members throughout the deployment cycle.
- ▶ Developed and utilized metrics that contribute to healthcare process improvements for wounded service members and evaluate the effectiveness of WII projects throughout Navy Medicine.
- ▶ Provided subject matter expertise and delivered detailed clinical analyses for Navy suicide case reviews to enhance prevention strategies in the Navy and Marine Corps.
- ▶ Developed a standard definition for chronic pain to identify chronic pain patients in need of medical resources. This effort also helped in defining the complexity of non-cancer chronic pain in Navy Medicine enrollees.
- ▶ Received an official invitation for NECE to become a World Health Organization Collaborating Center (WHO CC) for testing and evaluating pesticide dispersal technology.
- ▶ Tested over 265 insecticide compounds to evaluate their effectiveness in protecting service members from blood-feeding insects that carry human diseases.

With the WII activities integrated into our core mission, we will continue to provide Navy Medicine leadership with actionable data that supports the Navy and Marine Corps in preventing illness and injury, improving health outcomes, reducing costs, and maximizing force readiness. NMCPHC's commitment to serving our Sailors, Marines, and their respective families remains as enduring as our warfighters' commitment to defending freedom and democracy around the world!

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





Photo by Mass Communication Specialist 1st Class Martin Cuaron

## **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 Mass Communication Specialist 3rd Class Oliver Cole

## Executive Summary

NMCPHC delivers various public health services to support the readiness, resilience, and recovery of WII service members and their families. Our experts produce targeted resources and provide actionable data to operational and medical leadership to inform decisions and support mission readiness throughout the Navy and Marine Corps. These programs align with initiatives throughout the Department of Defense (DOD) and Department of the Navy (DON) to improve quality of care, healthcare outcomes, force health protection, and public health services.

In Fiscal Year (FY) 2015, the NMCPHC WII Program produced evidence-based public health strategies to enhance existing services and create new resources. This annual report details the services produced by NMCPHC, highlights collaboration across the project teams and with various organizations, and demonstrates the key findings and impacts of these achievements.

Since its inception in FY10, the NMCPHC WII Program has monitored health outcomes throughout the deployment cycle, analyzed disease data, promoted healthy living, consulted on health risk issues, and shaped public health in the Navy. What transformed from an ad hoc capability to an established program has now become part of NMCPHC's enduring mission and core capabilities. This evolution fortifies our ability to analyze and monitor healthcare outcomes and disease prevalence across the Military Health System (MHS) as well as implement insect control programs that prevent injuries and illnesses throughout the DOD.







Photo by Mass Communication Specialist 2nd Class Kyle D. Gahlau

## NMCPHC WII Program Description and Strategic Alignment

### PROGRAM HISTORY

Initiated in FY10 at the request of Navy Medicine leadership, the NMCPHC WII Program expanded its surveillance and program evaluation capabilities to monitor health outcomes and assess the care provided to WII Sailors and Marines. The program also produced tailored products that strengthen the health and well-being of service members. As a result, these capabilities presented Navy Medicine leadership with evidence-based products to inform decisions on emerging public health issues, enhance healthcare for WII service members, and optimize health promotion and prevention efforts for Sailors and Marines. The integration of these products and services is unique to NMCPHC, making it the go-to resource for epidemiologic surveillance, analytics, and program evaluations.

In FY12, BUMED conducted a Tier 2 assessment of NMCPHC WII Projects to ensure optimal value for the WII population and to justify the possible expansion, sustainment, or reduction of current projects. The assessment identified a favorable return on investment for the program overall, particularly for funds directed to the epidemiological surveillance and health analysis initiatives. Reviewers concluded that the project staff delivered high quality data analyses under extreme time constraints, and the WII 141 Project had a very strong surveillance component supported by competent staff.

Based on that assessment, in FY13, NMCPHC reorganized 15 projects into four distinct areas: **WII 141 Expanded Surveillance and Metrics Support**, **WII 141A Health Promotion and Wellness (HPW)**, **WII 141B Health Hazard Assessment (HHA)**, and **WII 141C NECE**. These projects capitalized on existing data systems and data collection tools to expand NMCPHC capabilities and strengthen Navy Medicine's ability to make data-driven decisions and drive positive changes for the WII population. Using evidence-based information, the program generated reports that inform policy decisions on population health and health services. In addition, these projects delivered outreach and educational resources that promote healthy behaviors and developed resources to protect service members against environmental hazards and blood-feeding insects that carry human disease.

The **Expanded Surveillance and Metrics Support Project** analyzed the effectiveness of BUMED WII programs and generated clinical health analysis reports to help reduce expenses and improve clinical outcomes. WII 141 surveillance activities captured and analyzed information from medical, personnel, and operational databases to examine the well-being of Sailors and Marines throughout the deployment cycle. These integrated capabilities provided operational and medical leadership with actionable data on health concerns affecting WII service members to help identify injuries and illness impacting mission readiness. These expanded capabilities established NMCPHC as



## NMCPHC WII PROGRAM DESCRIPTION AND STRATEGIC ALIGNMENT

the recognized experts for health analytics. As a result, NMCPHC led the tri-service analytics cell for the Secretary of Defense (SECDEF)'s MHS 90-Day Review in FY14, which evolved to an advanced analytic capability supporting the MHS High Reliability Organizational Task Force (HRO TF).

The **HPW Project** extended prevention efforts through evidence-based health promotion programs that hasten recovery and promote healthy lifestyles. These programs assisted individuals with achieving optimal readiness by increasing awareness of healthy and unhealthy behaviors that may affect healing, recovery, psychological health, and overall resilience. 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 to deliver healthy living products for service members throughout the continuum of care.

The **HHA Project** supported deployment health by identifying potential health risks, developing courses of action, and advising commanders of risks and threat countermeasures. In FY14, the HHA Project concluded after completing several risk assessments for various expeditionary environments, which supported the shared service capability of assessing environmental exposures. Finally, the **NECE Project** assessed effective and innovative ways to protect service members from blood-feeding insects that can

carry devastating human diseases.

After a program evaluation in FY15, BUMED transferred the remaining WII 141 and WII 141C project activities and their associated funding to NMCPHC to incorporate as part of its core mission, while maintaining the activities that support BUMED's WII program portfolio management. The timeline in Figure 1 details some key milestones achieved throughout the execution of the NMCPHC WII Program.

Over the past six years, NMCPHC has developed unparalleled data analysis and surveillance capabilities designed to support the improvement of services offered to WII service members, their families, and caregivers. What began as an ad hoc program is now an established resource for ongoing surveillance trends, analysis, and program evaluation. These capabilities continue to support leadership across the Navy and Marine Corps in making data-driven decisions on policies, practices, and the quality and availability of medical services that help treat and prevent illness and injuries and build resilience. Going forward, NMCPHC remains committed in its ongoing mission to provide services that inform health decisions, policy, and products to protect service members throughout the deployment cycle.

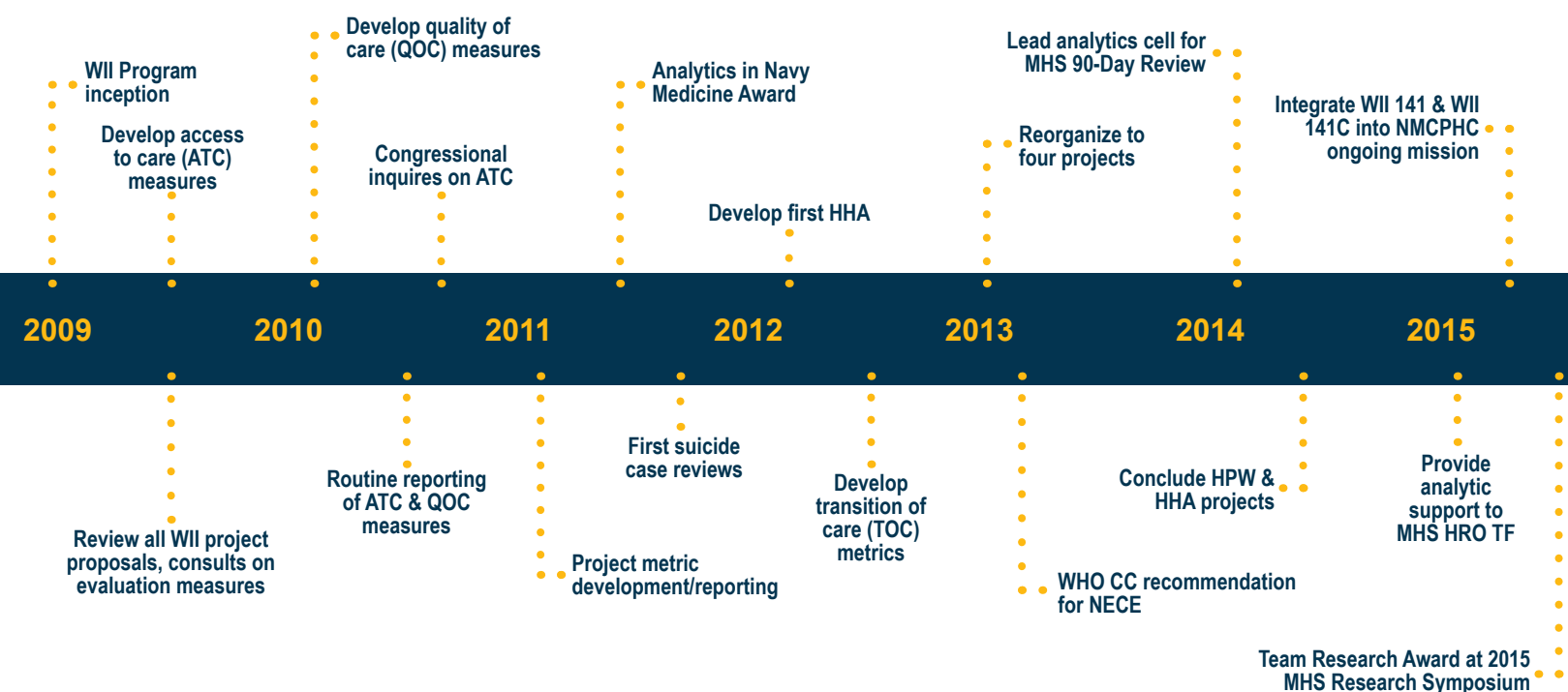


Figure 1: NMCPHC WII Program Timeline

## NMCPHC WII PROGRAM DESCRIPTION AND STRATEGIC ALIGNMENT

### STRATEGIC ALIGNMENT

The NMCPHC WII Program aligns to strategic initiatives throughout the DOD and DON, as depicted in Figure 2. These include the MHS Quadruple Aim, Navy Medicine Strategic Goals, 21st Century Sailor and Marine Initiative, and Force Health Protection. Each of these strategies serves as guiding frameworks for NMCPHC WII Program products and services with the goal to achieve a healthy force and ensure access to appropriate care and services. The NMCPHC WII Program also supports its command strategic goals by institutionalizing NMCPHC as a go-to resource for data-driven information to support mission readiness,

as well as optimizing resources to provide customized and targeted products and services that address the needs of our WII population. The following pages of this report detail the program and its key accomplishments that contribute to the health and well-being of the WII population and support the enduring mission and needs of operational and medical leadership.

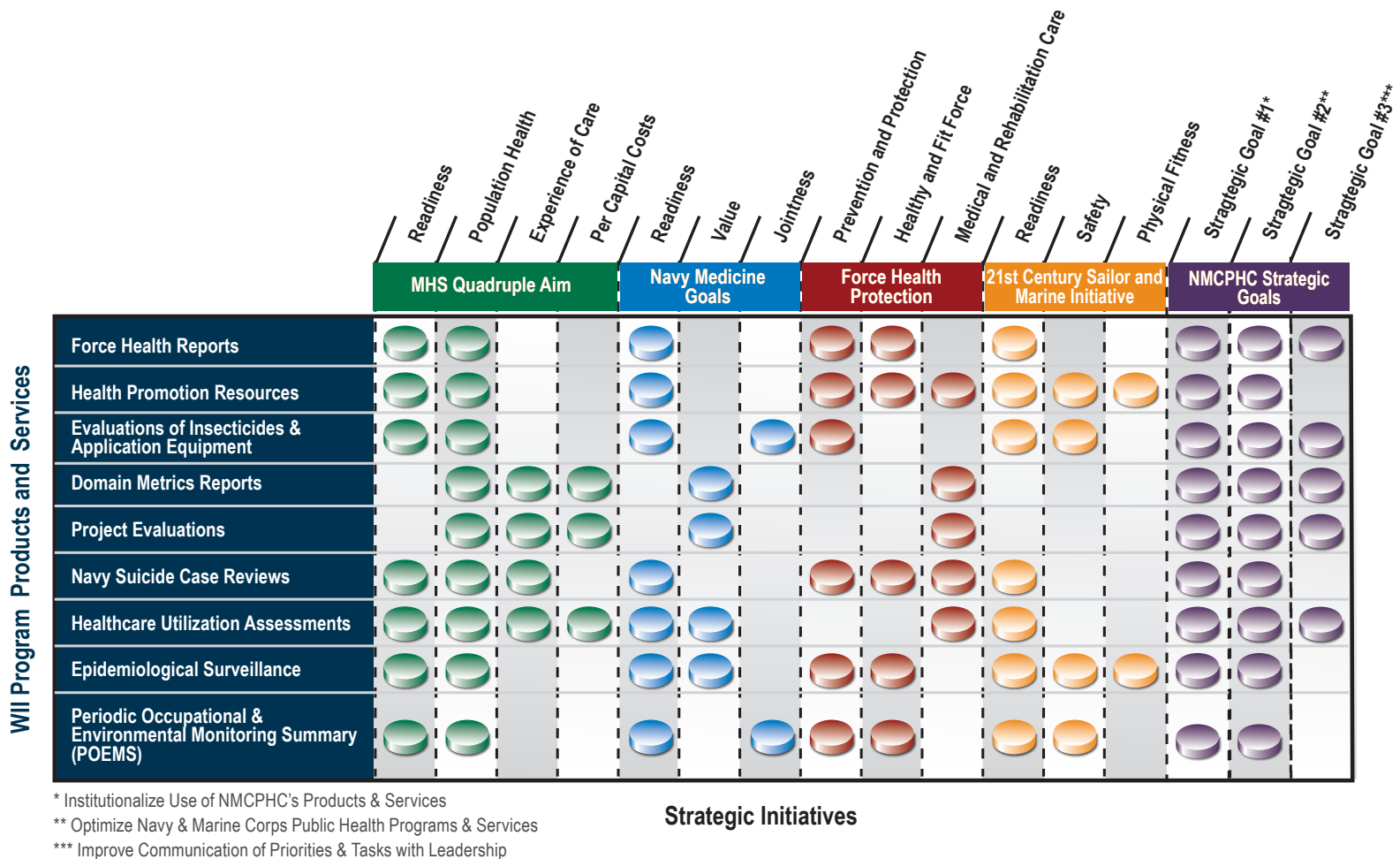


Figure 2: NMCPHC WII Products and Services Alignment to Strategic Initiatives

# 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.

EDC conducts population health surveillance and near real-time reporting on outcomes from deployment-related exposures and health trends affecting WII service members.

### Electronic Deployment Health Assessment Surveillance and Reporting

- Provided ongoing, multifaceted surveillance reporting to monitor overall compliance/completion of assessments, positive screens for health concerns, and provider referrals.
- Developed a solution in collaboration with the Defense Manpower Data Center and Medical Readiness Reporting System to improve compliance checking.
- Built a web-based tool to increase the efficiency of data uploads from standalone systems.
- Tested, evaluated, and deployed a new form, DD2978, to improve the capture of mental health data.

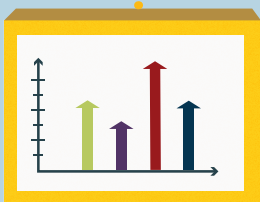
Captured over



**90,000**

deployment health assessments in FY15

EDC continues to expand injury surveillance projects to meet the ever-increasing demands for additional and enhanced injury reporting



### Medical Injury Reporting

- Produced reports for DON leadership highlighting injuries associated with theater, blasts, motor vehicle accidents, and certain occupations.
- Addressed injuries associated with enemy action.
- Included estimated cost of care metric to target interventions and reduce burden.

### Fleet and Force Health Surveillance Reports

- Developed monthly fleet and force reports highlighting current trends in psychotropic prescriptions, deployment health screens, behavioral health-related encounters, and in-theater medical encounters.
- Led to the development of reports specific to the Surface and Air Navy commands and a regimental breakdown for I Marine Expeditionary Force (I MEF).
- Produced a report covering four years to improve the understanding of ongoing trends.



Ten monthly reports covering nearly **300,000** service members

Tri-Service collaboration to improve inter-branch operability



### Periodic Health Assessment

- Developed analysis and tooling, as requested by BUMED, for adding automation regarding Defense Health Agency's (DHA) data processing.
- Consulted with NMCPHC and DHA on the content, design, functionality, and associated business rules.
- Improved data capture can enhance health surveillance and outcomes.

### Suicide Surveillance

- Provided in-depth reviews of medical and personnel records among suicides and suicide attempts to help identify key risk factors and support prevention efforts.
- Quickly addressed requests to provide medical reviews and analyses of recent suicides.
- Presented suicide surveillance methodology to DOD, civilian, and academic peers, which enhances NMCPHC's reputation as subject matter experts.



Presented **three** posters to a national conference audience with over **400** attendees from **30** countries



# Health Analysis

BLUF: Applies health data to improve outcomes and reduce unnecessary costs at every point of care.

HA provides analytic capabilities for Navy Medicine and the broader MHS to evaluate the access to care and quality of healthcare programs.

## Chronic Pain Definition

- Developed a standard definition to identify chronic pain patients in need of medical resources.
- Assessed the burden and complexity of non-cancer chronic pain in Navy Medicine enrollees.
- Provided a data-driven method for leadership to triage patients based on their unique needs for pain management services.



Projected the impact of moving  
~15,000 Sailors and family members



Identified  
**180,000**  
non-cancer chronic  
pain patients

## Spatial Analysis of Population Density

- Projected the impact a population increase would have on access to care across San Diego medical facilities.
- Determined where beneficiaries will likely move based on the present population, naval housing, population and housing growth, housing affordability, and commute time.
- Supported personnel, equipment, and facility resource allocation based on projected needs to ensure access to care.

## Manpower and Reserve Affairs Drug Demand Reduction Program Evaluation

- Examined prescription drug misuse and use trends in the Navy and Marine Corps.
- Analyzed prescription drugs, prescribing practices, and usage patterns and found that the use of prescription medications has largely remained stable.
- Provided leadership with results that will inform improvements to drug testing policy.



Reported **seven** metrics to track case  
management workload and coding trends

Reviewed  
**2 million**  
records spanning  
5 years



## Transition of Care

- Assessed compliance to DOD coding guidance for case management services.
- Identified opportunities for improvements in documentation of case management workload across Navy Medicine.
- Provided actionable improvement recommendations to guide decision-making related to case management resources.

## Behavioral Health Integration Program, Program Evaluation

- Analyzed the effectiveness of incorporating internal behavioral health consultants in the primary care setting at improving patient access to mental health services.
- Provided leadership insight into how much their behavioral health consultants are used, the most common diagnoses they encounter, and potential metrics to use for assessing program impact.



Identified that ~40 behavioral health  
consultants met with ~16,000 beneficiaries

**BLUF:** Protects service members from blood-feeding insects that carry life-threatening diseases by improving the safety and effectiveness of control programs.

NECE develops and assesses effective insecticides and application equipment and techniques to protect the health and operational readiness of service members.

## ● **Effectiveness of Insecticides Applied to Building Materials to Control Vectors of Malaria**

- Assessed the efficacy of a new formulation of long-lasting insecticide against malaria-carrying mosquitoes when applied to a variety of building materials in malaria-endemic regions of Africa.
- Collaborated with the Centers for Disease Control and Prevention (CDC) and Florida Army National Guard, Camp Blanding to enhance control programs.
- Reducing the incidence of malaria will enhance force health protection for deployed service members.



**3** insecticide compounds field-tested for efficacy against insects in FY15; 36 since FY11



compounds screened for efficacy against insects in laboratory conditions in FY15; 3,754 since FY11

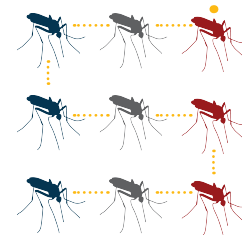
## ● **Assessment of Novel Insecticide Formulations Applied to Tent Surfaces and Liners**

- Investigated new insecticide materials in the laboratory to respond to new tent materials used in the field.
- Applying residual insecticides on the outside of tents will provide additional layer of protection for deployed service members.

## ● **Discovery and Evaluation of Novel Biopesticides-Ribonucleic Acid Interference (RNAi) Construct Bioactivity Against Mosquitoes**

- Developed and tested RNAi triggers against adult mosquitoes transmitting yellow fever, chikungunya, and dengue fever.
- Completed work demonstrates encouraging results that may lead to highly effective, species-specific insecticides.

**9** in-house produced RNAi and an additional 13 constructs submitted for manufacture



**major collaborative projects underway in FY15; 192 since FY11**

## ● **Officially Invited as World Health Organization Collaborating Center (WHO CC)**

- NECE officially invited to become a WHO CC for testing and evaluating pesticide dispersal technology.
- Serves as the only international center of excellence for insecticide application, significantly improving the protection of service members in areas all over the world.

## ● **Evaluation of Military Uniforms Factory-Treated with Permethrin Against Mosquitoes:**

- Assessed the ability of insecticide-treated uniforms to repel host-seeking mosquitoes in preliminary semi-field studies.
- Determining the effectiveness of these uniforms over time aims to protect deployed warfighters against mosquito-borne diseases.



**17** insecticide application techniques and sprayers field tested in FY15; 166 since FY11



Photo by Mass Communication Specialist Seaman Apprentice Markus Castaneda

## The Mission Ahead for NMCPHC

With the pivot to the Pacific, increasing tensions in the Gulf, and new threats in Europe, the Navy's mission has changed but has not slowed down. NMCPHC's products and services will help the DON sustain the health of Sailors, Marines, and their families as well as improve the recovery of WII service members. The capabilities developed through the NMCPHC WII Program have become an integral part of BUMED's public health mission and are now requirements of NMCPHC's core mission. This integration allows NMCPHC to provide ongoing analysis and surveillance for healthcare outcomes and disease and injury occurrence across the MHS. It also allows NMCPHC to continue implementing insect control programs that prevent injuries and illnesses throughout the DOD.

NMCPHC will continue to support WII project level metric development to assist BUMED in managing its WII portfolio and provide leadership with analyses to enable data-driven actions. The team will continue examining healthcare data throughout the deployment cycle to assess health outcomes, help inform clinical practices, and reduce costs across Navy Medicine.

NECE will develop cutting-edge entomological products that support mission readiness and guard service members from blood-feeding insects that carry human disease. NECE will establish additional collaborative research efforts around the globe to produce new and improved products to protect service members in deployed environments.

The products and services provided by NMCPHC will remain critical to supporting the state of readiness, resiliency, and recovery of the WII population. NMCPHC is committed to supporting force health protection through prevention services and products for WII Sailors and Marines. Efforts going forward will capitalize on the extensive research, analysis, and unique products executed over the past several years. Informed prevention, monitoring, and recovery strategies will enhance the long-term health of service members. NMCPHC will continue to collaborate with organizations throughout the MHS to support the ability of decision makers and care providers to improve the health of all service members.

"As we have drawn down from two land wars our sister services talk about "re-set" and coming home. Well there are no permanent homecomings for Sailors and Marines."

- Honorable Ray Mabus, Surface Navy Association Symposium - 15 January 2015.





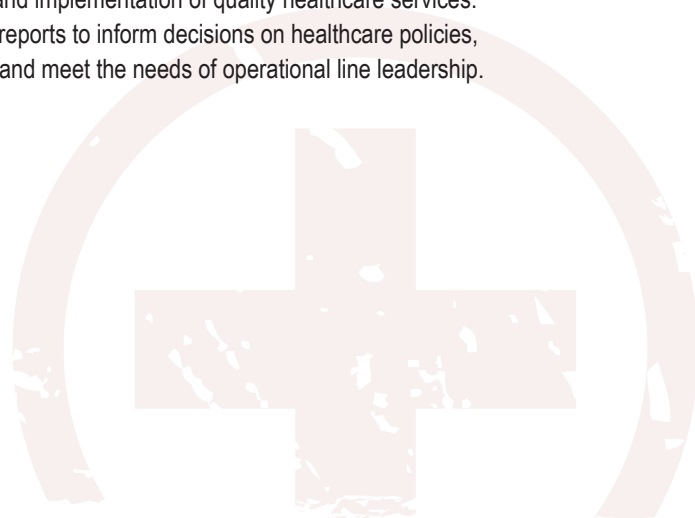
Photo by Chief Mass Communication Specialist Scott B. Boyle

## Appendix A: Products and Services Compendium

The NMCPHC WII Program supports Navy Medicine in addressing the healthcare needs of WII Sailors and Marines through a variety of products and services. These data-driven resources help leadership make decisions to improve clinical results, reduce healthcare expenses, and protect against environmental health hazards. The following sections detail the products and services provided in FY15 along with their associated outcomes and impacts across 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) Department, provides medical and operational leadership with epidemiological surveillance and clinical health analysis to inform decisions on healthcare policies and programs. EDC experts conduct population health surveillance to enhance military readiness by providing stakeholders with information to make data-driven decisions on disease and injury prevention programs. HA experts provide information to improve clinical outcomes, reduce unnecessary costs, and support the development and implementation of quality healthcare services. In FY15, this multidisciplinary team of experts produced actionable data and reports to inform decisions on healthcare policies, interventions, and programs that support Navy Medicine's enduring mission, and meet the needs of operational line leadership.



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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 and provide feedback on disease prevention efforts. 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. In FY15, EDC further improved existing reports and expanded the number of service members covered and report recipients. Additionally, through collaboration with other departments within NMCPHC, EDC improved upon web-based tools to collect and capture data, developed standardization tools and methodology for suicide surveillance, and performed investigations and consultation for cancer clusters. The following table details the FY15 accomplishments.

Focus Area	Key Product	Returns/Outcomes
Ongoing Surveillance	<b>Navy Expeditionary Combat Command (NECC) WII Registry</b> Created a monthly database registry of NECC service members diagnosed with injuries and behavioral health conditions to aid in identifying service members in need of potential follow-up care.	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.
	<b>Monthly and Multiyear Force and Fleet Health Surveillance Reports</b> Produced reports for ten 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/Fleet Surgeons to assess health trends and identify potential concerns.	
	<b>PDHA/PDHRA Screen Reports and Bi-Weekly PDHRA Reports</b> 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 reports describe the 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.	
	<b>Integrated Disability Evaluation System (IDES) Monthly Report</b> Conducted an analysis of the Medical Evaluation Board (MEB) and referrals from the IDES. 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.	
	<b>Electronic Deployment Health Assessment (eDHA) Data Transfers</b> 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.	
	<b>Deployment Health Assessment Compliance Reports</b> 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.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT  
EPIDATA CENTER

Focus Area	Key Product	Returns/Outcomes
Ongoing Surveillance  (continued)	<b>Periodic Health Assessment (PHA)</b> Developed a PHA web tool, using the eDHA as a model, to help add automation to Defense Health Agency's (DHA) data processing. Consulted with NMCPHC and DHA on the content, design, functionality, and associated business rules. Requested and funded by BUMED to support the DHA PHA working group.	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.
	<b>Annual Hospital Discharge</b> Developed a report describing 2014 hospital discharges among all Navy and Marine Corps beneficiaries by major diagnosis category. Report reviews trends from 2009 to 2014, differences between Navy and Marine Corps, and demographics including differences in genders.	
Behavioral and Mental Health	<b>PTSD Quarterly Report</b> Generated reports for BUMED of PTSD incidence since 2002 in active duty service members and recruits with PTSD diagnoses and those still currently on active duty.	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 healthcare decisions.
	<b>Mental Health Assessments (MHA) Monthly Report</b> Developed monthly reports 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.	
	<b>Quarterly Alcohol and Substance Abuse Incidence Reports</b> Determined prevalence of alcohol and substance abuse/dependence among Sailors and Marines as requested by BUMED.	
	<b>Quarterly Depressive Disorder (DD) Incidence Reports</b> Developed quarterly reports, to support BUMED, describing the incidence of DD among active duty DON service members and recruits since 2003, as well as the number of service members diagnosed with DD who are currently active duty and received DD-specific care within the past 12 months.	
	<b>Tobacco Reporting</b> Analyzed responses on the eDHA for indications of tobacco use before and after deployments.	
	<b>Annual Surveillance of TBI</b> 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.	
	<b>PTSD and TBI Medications</b> Responded to a request by BUMED to provide the number and percent of individuals with PTSD and TBI from January 2012 through March 2015 to support a congressional paper.	
	<b>NECC PDHRA Behavioral Health Screens and Referrals 2011 to 2014</b> Provided information on the number of self-reported positive behavioral health screens and provider referrals on NECC PDHRAs from June 2011 to January 2014.	



WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT  
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Focus Area	Key Product	Returns/Outcomes
Behavioral and Mental Health <i>(continued)</i>	<b>Levaquin Transactions in DON</b> Analyzed prescriptions of the antibiotic Levaquin among all DON beneficiaries, describing trends over years and comorbid conditions identified while taking the drug.	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 healthcare decisions.
	<b>Review of Psychotropic Medications among DON Active Duty for FY14</b> Reported on the number and percentage of service members who had at least one prescription for any of the drugs of interest.	
	<b>Behavioral Health Encounters among Active Duty NECC</b> Provided the number of active duty Sailors that received care at a behavioral health clinic from 2006 to 2014 and the average number of encounters per service member to NECC. Used results to identify potential increases in encounters due to intervention programs within four NECC groups.	
Medical Injuries Reports	<b>Annual Injury Reports for U.S. Navy and Marine Corps</b> 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 BUMED's ability to allocate resources effectively and efficiently. New estimates for cost of care were included and the report specifically addresses injuries associated with enemy action. Used by Major Claimant Occupational Safety and Health Managers to target interventions to reduce the burden of injury on operational readiness.	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.
	<b>Weekly Fleet Disease and Injury Report</b> Provided weekly analyses of the medical encounters submitted from the Fleet through Theater Medical Data Store to identify the rate of encounters for 18 conditions of interest and track how effectively ships across the Navy transmit data. The analyses are done in support of the Preventive Medicine Department at NMCPHC and U.S. Fleet Forces Command.	
	<b>DON Aviation Maintainers Injury Report</b> Provided a five-year review of all DON aviation maintenance injury rates to the Office of the Assistant Secretary of the Navy, Energy Installations and Environment to develop conclusions and recommendations for future preventive efforts.	
	<b>Motor Vehicle and Motorcycle Accident Injury Report</b> Examined injury type and injury locations among active duty Marines and Sailors injured in non-combat motor vehicle accidents and those intoxicated at the time of the injury-related health encounter from FY10-FY14.	
	<b>Marine Corps Injury Rates among Recruits</b> Provided injury counts to the Marine Corps Basic School in support of a congressional request for information as well as in support of reworking occupation specialty codes.	
	<b>DOD Safety and Occupational Health Working Group Meeting</b> Presented baseline data for injury cause coding to be used in a pilot study to assess barriers to injury-case coding, provide training, and improve compliance across services.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT  
EPIDATA CENTER

Focus Area	Key Product	Returns/Outcomes
<b>Medical Injuries Reports</b>  <i>(continued)</i>	<b>Navy Inspector General Injury Data Request</b> Provided summary of injuries treated at BUMED MTFs among active duty members, in response to a special request from the BUMED Budget Submitting Office. Provided injury rates by type of injury and location.	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.
	<b>Safety and Occupational Health Steering Groups</b> Provided analysis of the use of injury cause codes (ICD-9 E Codes) in ambulatory medical encounter records. Results will help determine recommendations for using E codes within the military medical reporting system.	
<b>Suicide</b>	<b>2013 U.S. Navy Suicide Deep Dive</b> Conducted in-depth analyses of suicide attempts among Sailors who died by suicide and developed reports detailing health encounters, pharmaceutical prescriptions, health assessments, and chemistry data among service members.	Completed suicide analysis; used reports to identify risk factors and prevention approaches for suicide vulnerability and ideation among WII service members.
	<b>II Marine Expeditionary Force (MEF) Suicide Deep Dives</b> Conducted in-depth analyses of suicide deaths among Marines and developed reports detailing medical data, personnel records, and military medical notes.	
	<b>Suicide Attempts</b> Performed comprehensive medical reviews of Marines who attempted suicide to inform prevention efforts and identify risk factors.	
	<b>United States Marine Corps (USMC) Suicide Review Tasker</b> Completed a review of medical, personnel, demographic, and deployment information from Marines who died by suicide for the USMC Behavioral Health Group to inform suicide prevention efforts.	
<b>Occupational and Environmental</b>	<b>Chemical Warfare Agent Exposures in Theater</b> Performed in-depth PDHAs and medical records for potential chemical warfare exposures reports during deployment in collaboration with Assistant Secretary of the Navy, Manpower and Reserve Affairs (ASN M&RA), BUMED, and the USMC Medical Staff.	Investigated, reported, and consulted on occupational- and environmental-related exposures, conditions, and injuries in service members.
	<b>Marine Corps Forces Special Operations Command (MARSOC) Reportable Events</b> Completed an analysis exploring the historical burden of reportable disease in the garrison and deployed settings among MARSOC Marines.	
	<b>Hearing Loss among Marines</b> Assessed the prevalence and incidence of hearing loss in Marines from 2010 to 2014. Identified the number of Marines entering the service with hearing loss and the top military occupational codes for potential targeted preventive interventions.	
	<b>DOD Recruit Conjunctivitis Encounters</b> Performed analysis describing the burden of conjunctivitis diagnoses among the DOD recruit populations from 2007 to 2014.	
	<b>Investigation of Adult Cancer Cases</b> Investigated adult cancers among civilian personnel working in one specific building. Summarized a review of each cancer and provided health education on cancer risk factors, including lifestyle and environmental exposures, and latency periods. Provided a final report that was shared with installation leadership and concerned employees.	

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT  
EPIDATA CENTER

Focus Area	Key Product	Returns/Outcomes
Occupational and Environmental  (continued)	<b>Investigation of Pediatric Cancer Cases</b> Collaborated with NMCPHC departments to investigate a complaint regarding pediatric exposure to polycyclic aromatic hydrocarbons. Reviewed medical and environmental data and shared the findings with concerned family members.	Investigated, reported, and consulted on occupational- and environmental-related exposures, conditions, and injuries in service members.
	<b>Exposure Related Cancer Investigations</b> Investigated a suspected link between potential deployment-related exposures and the occurrence of four types of cancer among service members, providing reviews of each cancer and health education on cancer risk factors. Additionally, collaborated within NMCPHC to complete a review of cancer cases connected with a complaint of exposure to carcinogens.	
BUMED M9 Appointed WII Project Evaluations	U.S. Navy and Marine Corps Reserves Psychological Health Outreach Program (WII Project #90)	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.
	Returning Warrior Workshop (WII Project #91)	
	Case Management and Coordination for Wounded Warrior Regiment (WII Project #95)	
	IDES (WII Project #W100)	
	My Ongoing Recovery Experience Program (WII Project #101)	
	TBI Treatment and Cognitive Rehabilitation Program, Naval Hospital Camp LeJeune (WII Project #172)	
	TBI and Related Disorders Mobile Assessment Unit (WII Project #178)	
	USMC Outreach and Coaching (WII Project #237)	
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 TBI Incidence	
	PTSD Burden by MTF, Active Duty Navy and Marine Corps	
	Burden of War-related Amputations Among Navy and Marine Corps	
	Total Predicted Encounters in Assigned MTF	
	Number of Marines Predicted to Return from Deployment	
	Predicting PTSD, TBI, and MDD in Marines Expected to Return from Deployment by Assigned MTF	
	eDHA Referral Metric	

## WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT HEALTH ANALYSIS

### HEALTH ANALYSIS

As a team of clinicians, epidemiologists, and other health analysts, the Health Analysis (HA) Department possesses unparalleled health analytics expertise. HA provides credible, relevant, evidence-based data that provides customers with information and instills confidence to make critical decisions. As one customer stated, “Because of your efforts, Navy Medicine has a framework to operationalize data analytics and lean forward in providing actionable business intelligence to our providers for robust process improvement.” HA continues to play a pivotal role in providing leadership with decision-quality data that affects enterprise-wide initiatives. For example, HA ensured the appropriate use of MHS data during SECDEF’s MHS 90-Day Review, informed drug testing policy for ASN M&RA Drug Demand Reduction Program, and developed automated data visualizations to help MHS leadership assess safety, quality, and performance. The following table further exemplifies the way in which HA supports improved access to care and quality of care for WII service members.

Focus Area	Key Product	Returns/Outcomes
Healthcare Utilization and Needs Assessments	<b>Mental Health Appointment Report: Reducing No-shows</b> Provided a descriptive analysis of patient demographics and related appointment trends to improve access to mental health care. The analysis guides resource allocation to reduce no-show rates.	Developed evaluation metrics to facilitate the assessment of healthcare programs. Conducted data analyses and completed reports to identify MTFs that may require additional resources to care for WII service members to improve Access to Care (ATC), Quality of Care (QOC), and program impact.
	<b>National Defense Authorization Act of 2013 Reporting Requirements</b> Calculated the average number of days from appointment scheduling to booking for select clinics across Navy Medicine. BUMED M93 incorporated this into a package for higher-level leadership.	
	<b>Marine Centered Medical Homes (MCMH) Evaluation</b> Examined trends in kept referral appointments and wait times prior to the implementation of MCMHs, as well as differences in these measures between MCMH enrollees and three non-MCMH enrollee categories (MTF enrolled, Operational Forces, Unenrolled) since the start of the program. This report sets up a future analysis that will examine kept referral appointments and wait times.	
	<b>Marine Corps Mental Health ATC Report</b> Analyzed the effect of a memorandum of understanding between MTF mental health clinics and Marine Corps Community Services (MCCS). The goal is to improve ATC by having MTF mental health clinics treat medical mental health conditions, while MCCS will treat non-medical mental health conditions (sub-clinical counseling, life circumstance issues, etc.).	
	<b>WII Nutritional Services Report for Health Promotion and Wellness</b> Provided a descriptive analysis of patient demographics and related trends of nutritional service encounters for the WII population. Provided a baseline understanding of the WII population’s use of nutritional services.	
	<b>Spatial Analysis of 32nd Street Beneficiaries and Projected Population Growth for Navy Medicine West</b> Utilized geographic information systems and epidemiologic methods to calculate the projected population growth of 32nd street beneficiaries to anticipate where beneficiaries will likely reside based on the present beneficiary population, naval housing, population/housing growth, housing affordability, and commute time. Delivered the report to Navy Medicine leadership to support resource allocation and ATC decision making.	



## WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT HEALTH ANALYSIS

Focus Area	Key Product	Returns/Outcomes
<b>Healthcare Utilization and Needs Assessments</b>  <i>(continued)</i>	<b>Spatial Analysis of Naval Medical Center Portsmouth Population Density and Healthcare Use</b> Examined optimal areas for clinic location and provided a picture of healthcare utilization practices. Identified areas with the highest enrollee populations, as well as unenrolled and eligible patients living in the Tidewater area. This supported beneficiary recapture efforts, resource allocation, and improved ATC.	Developed evaluation metrics to facilitate the assessment of healthcare programs. Conducted data analyses and completed reports to identify MTFs that may require additional resources to care for WII service members to improve Access to Care (ATC), Quality of Care (QOC), and program impact.
<b>Substance Use Disorders and Tobacco Cessation</b>	<b>ASN M&amp;RA Drug Demand Reduction Program Evaluation FY15 Project</b> Analyzed use of prescription medications and relation to Navy drug test results among Navy and Marine Corps active duty and reserve active duty service members for ASN M&RA. Briefed ASN M&RA to discuss the gap analysis and risk factor analysis to support improvements in the Drug Demand Reduction Program.	Analyzed data and developed additional concepts and 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, inform drug testing policy development, and identify appropriate interventions.
	<b>Prescription Drug Analysis for WII Program Leadership</b> Delivered a report to BUMED M9 targeting the relationship between medication usage patterns and deployment characteristics of WII active duty and reserve active duty Sailors and Marines. Described the characteristics for those who were dispensed a mental health medication prescription from FY09-FY13. This builds off the Drug Demand Reduction Program Evaluation Project FY14 report and helps leadership understand medication use and appropriate interventions for different populations.	
	<b>Tobacco Cessation Metrics: BUMED M3 Tobacco Tasker</b> Analyzed the tobacco metrics currently available on the Population Health Navigator Dashboard. Provided the Navy Surgeon General evidence-based support for tobacco cessation policy.	
	<b>Substance Abuse and Rehabilitation Program Analysis</b> Provided a descriptive analysis of Sailors and Marines attending substance abuse clinics at MTFs from FY12-FY14. The report indicated that the number of patients in substance abuse clinics decreased about 20% each year. This established a foundation for future substance abuse studies.	
<b>Suicide</b>	<b>Suicide Case Reviews</b> Worked with EDC personnel to assist the 21st Century Sailor's Office Suicide Prevention Program in identifying patterns, evaluating existing programs, determining intervention opportunities, and assessing data quality. Provided detailed case narratives to use as a primary data source for evaluating each incident during 2013.	Delivered analytic support for Navy suicide studies that informed healthcare leaders and policy makers on program effectiveness and potential interventions to prevent suicide.

## WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT HEALTH ANALYSIS

Focus Area	Key Product	Returns/Outcomes
Domain Metrics Assessments	<b>ATC Quarterly Reports</b> Analyzed trends in mental health care access and clinical care efficiency metrics for the WII population.	Developed reports detailing outcomes and trends in ATC, QOC, and Transition of Care (TOC) from FY09 to present. Enabled BUMED M9 leadership to ensure access to mental health services for Navy beneficiaries.
	<b>QOC Quarterly Reports</b> Analyzed five metrics that assess care related to PTSD and Substance Use Disorder across Navy MTFs. Provided BUMED M9 leadership with an enterprise-wide assessment of the WII program's progress and effectiveness.	
	<b>TOC Quarterly Reports</b> Assessed TOC to ensure proper case management services. Used by BUMED program leads to meet an Assistant Secretary of Defense requirement.	
BUMED M9 Appointed WII Project Evaluations	Comprehensive Aesthetic Restorative Effort (Project CARE) (WII Project #163 and #163A)	Contributed expertise in study methodology and metrics development to assist with quarterly reporting and analysis for WII projects under the ATC and QOC domains. Improved data quality and collection allowed BUMED M9 to assess project and program effectiveness.
	Navy Medicine's Reintegration and Education Program (WII Project #W184)	
	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 Naval Hospital Jacksonville (WII Project #226)	
	Naval Hospital Jacksonville Wounded Warrior Rehabilitation Program (WII Project #W230)	
	Deputy Officer in Charge, Operational Forces Medical Liaison (WII Project #W231)	

## WII 141C Project: Navy Entomology Center of Excellence

NECE serves as a center of excellence for “how” public health insecticides are applied - equally important as which insecticide is applied. NECE develops and implements novel control compounds and technologies to better protect deployed warfighters and at risk populations from insects that transmit diseases.

Focus Area	Key Product	Returns/Outcomes
Testing and Evaluation	<b>World Health Organization Collaborating Center (WHO CC) Invitation</b> Officially invited as a WHO CC for testing and evaluating insecticide application equipment, NECE now serves as the only international center of excellence for how public health insecticides are applied. Established collaborative research efforts with new national and international federal laboratories, universities, and industries to produce and improve products that protect deployed warfighters from insects that transmit diseases and help promote global health, a key national security priority for the DOD and Navy.	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. This results in the standardization of equipment and application techniques based on the best possible technology.
	<b>Field Evaluation of Residual Activity of Chlorfenapyr (Insecticide) Against Different Mosquito Colonies Susceptible and Resistant to Pyrethroid Insecticides</b> Tested 16 panels of cement representing four treatments and two exposure times using a susceptible Orlando colony and a pyrethroid-resistant Puerto Rican strain of <i>Aedes aegypti</i> (mosquitoes) for one month. This compound, characterized by a new active ingredient, may be beneficial to control pyrethroid-resistant mosquito populations. There is a high incidence of pyrethroid resistance throughout Africa and Southeast Asia. New compounds with different active ingredients are critical in providing the best possible protection to the deployed warfighter.	
	<b>Efficacy of Residual Insecticides Applied to a Variety of Building Materials to Control Vectors of Malaria</b> Collaborated with the Centers for Disease Control and Prevention (CDC) and Florida Army National Guard, Camp Blanding, to enhance control programs. Assessed the efficacy of a new formulation of long-lasting deltamethrin (insecticide) against <i>Anopheles gambiae</i> (malaria transmitting mosquitoes) when applied to building materials found in malaria-endemic regions of Africa such as plywood, galvanized steel, and cement. Indoor application of residual insecticides is one component of a comprehensive malaria control program implemented in Africa as part of the President's Malaria Initiative. Reducing the incidence of malaria will enhance force health protection for deployed service members.	
	<b>Evaluation of Factory-Treated Permethrin Military Uniforms Against Mosquitoes</b> Evaluated military uniforms factory-treated with permethrin (insecticide) to repel host-seeking <i>Aedes aegypti</i> (mosquitoes) in preliminary semi-field studies in collaboration with the Natick Soldier Research, Development and Engineering Center and the Armed Forces Pest Management Board. The study aims to determine the effectiveness of factory-treated uniforms, over time, relative to washing intervals, fabric wear, and coverage of unprotected skin surface for protecting deployed individuals against mosquito bites thereby lowering the risk of acquiring mosquito-borne diseases.	
	<b>Discovery and Evaluation of Novel Biopesticides-Ribonucleic Acid Interference (RNAi) Construct Bioactivity Against Mosquitoes</b> Resulted in development and testing of 16 collaborator-provided and nine in-house produced RNAi (inhibit gene expression) triggers against mosquitoes that transmit filariasis, West Nile fever, and encephalitis which is also under evaluation against some of the RNAi constructs for bioactivity. Submitted a provisional patent application based on two very effective constructs and submitted an additional 13 constructs for manufacture. Work completed to date is extremely encouraging and may lead to highly effective, species-specific insecticides.	



WII 141C PROJECT:  
NAVY ENTOMOLOGY CENTER OF EXCELLENCE

Focus Area	Key Product	Returns/Outcomes
Novel Control Techniques	<b>Laboratory Susceptibility of a Pyrethroid Susceptible (Orlando) and Resistant (Puerto Rican) Strain of Mosquitoes to Chlorfenapyr (Insecticide)</b> Reduced control of mosquitoes that host yellow fever, dengue fever, and chikungunya due to pyrethroid (insecticide) resistance in mosquitoes increases risk of contracting disease on the battlefield. To increase insect mortality, it is a priority to discover insecticides that contain active ingredients with novel modes of action (how it affects the insect). Chlorfenapyr is a potentially effective alternative as it uncouples oxidative metabolism. To determine effectiveness, NECE characterized pyrethroid resistance in a strain of recently colonized <i>Aedes aegypti</i> from San Juan, Puerto Rico by comparison to the susceptible Orlando strain. Examined the effects of dose, time, and temperature for chlorfenapyr using the CDC bottle bioassay.	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.
	<b>Incorporation of a Bacterial Agent into Sugar During Feeding Assays to Control Mosquitoes</b> Developed this study, which is in preliminary stages, to determine the feasibility of using VectoBac WDG ( <i>Bacillus thuringiensis</i> var. <i>israelensis</i> , a bacterial agent) incorporated into a sugar solution to kill adult mosquitoes. The study aims to determine the appropriate concentration of insecticides necessary to produce mortality as well as optimize a standard sugar feeding solution.	
	<b>Residual Efficacy of Novel Insecticide Formulations Applied to Tent Materials</b> Tested four novel lambda-cyhalothrin formulas on tent surfaces and liners that failed to provide 80% mortality of adult <i>Aedes aegypti</i> in semi-field exposure trials. Results showed interference from the vinyl tent plasticizer interacting with carriers of some formations caused a stickiness of tent surfaces. New insecticide carriers are under investigation in the laboratory. Residual insecticides applied to the outside of tents provide an additional layer of protection for deployed service members who are at their most vulnerable to insect bites (sleeping, relaxed uniform). Tents used in the field today are constructed of vinyl or vinyl-like materials that resist moisture compared to canvas materials. As a result, current insecticide formulations do not adhere to the tent material and developing new formulations is critical.	

## Appendix B: Contact Information - NMCPHC WII Program

WII Program Area	NMCPHC Point of Contact	Email	Phone Number	DSN
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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
CDC	Centers for Disease Control and Prevention
DD	Depressive Disorder
DHA	Defense Health Agency
DOD	Department of Defense
DON	Department of the Navy
EDC	EpiData Center
eDHA	Electronic Deployment Health Assessment
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
M9	BUMED Wound, Ill, and Injured Code
MARSOC	Marine Corps Forces Special Operations Command
MCCS	Marine Corps Community Services
MCMH	Marine Centered Medical Home
MDD	Major Depressive Disorder
MEB	Medical Evaluation Board

Acronym	Definition
MEF	Marine Expeditionary Force
MHA	Mental Health Assessment
MHS	Military Health System
MTF	Medical Treatment Facility
NECC	Navy Expeditionary Combat Command
NECE	Navy Entomology Center of Excellence
NMCPHC	Navy and Marine Corps Public Health Center
PDHA	Post-Deployment Health Assessment
PDHRA	Post-Deployment Health Reassessment
PHA	Periodic Health Assessment
PTSD	Post-Traumatic Stress Disorder
QOC	Quality of Care
RNAi	Ribonucleic Acid Interference
SECDEF	Secretary of Defense
TBI	Traumatic Brain Injury
TOC	Transition of Care
USMC	United States Marine Corps
WII	Wounded, Ill, and Injured
WHO CC	World Health Organization Collaborating Center







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