



Fuel Handlers simulate carrying a wounded shipmate during a Mass Casualty drill aboard the Nimitz-class aircraft carrier USS George Washington (CVN 73).



Wounded, Ill, and Injured Project 2012 Annual Report

Public Health Support for Our Nation's Warriors



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Wounded, Ill, and Injured Report 2012 Annual Report

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Captain Michael J. Macinski

"The Navy and Marine Corps Public Health Center's commitment to serving our Sailors, Marines and their families remains as enduring as their commitment and sacrifice in support of our nation's freedom."

MESSAGE FROM THE COMMANDING OFFICER

United States (U.S.) Sailors and Marines who answer the call of duty to protect our nation's freedom often risk illness and injury during their service. Navy Medicine stands ready with an unwavering commitment to provide the best possible care, treatment, and support for our wounded, ill, and injured (WII) warriors and their families. The Navy and Marine Corps Public Health Center (NMCPHC) embraces this enduring commitment. We are proud to augment force health readiness for U.S. Sailors and Marines worldwide. We improve public health protection through evidence-based prevention and promotion. We integrate surveillance, data analysis, and health promotion. We promote services that synergize to ensure WII service members receive world-class, data-driven healthcare services and programs.

With distinct pleasure, I introduce our *NMCPHC Wounded, Ill, and Injured Project 2012 Annual Report*, the second of its kind. This report details the many accomplishments and impacts of our products and services. In calendar year 2012, NMCPHC's role in Navy Medicine expanded and matured. We enhanced existing programs and launched new programs to deploy evidence-based products and services in support of our fighting forces throughout the operational cycle. In fact, the Navy Bureau of Medicine and Surgery WII (M9) Tier 2 assessment of our WII 141 Project validated what I always knew—that the key component of our programs, as well as our greatest strength, is the dedication and professionalism of our staff. Some of our most notable successes included:

- ▶ Developed and applied advanced metrics and assessments for WII projects throughout Navy Medicine.
- ▶ Evaluated the effectiveness of services and products delivered to our wounded warriors.
- ▶ Created the Navy's first Periodic Occupational and Environmental Monitoring Summary at Camp Lemonier, to quantify the health risks associated with environmental stressors and exposures during deployment.
- ▶ Played a key role in Navy suicide case reviews for the Chief of Naval Operations, the Navy Surgeon General, and the Chief of Naval Air Training, delivering comprehensive medical data to identify risk factors and suicide prevention strategies.
- ▶ Established a Geographic Information Systems capability to conduct spatial analysis and surveillance of the health risks associated with deployment-related environmental exposures.
- ▶ Developed and tested new technologies through the Navy Entomology Center of Excellence to combat disease-carrying, blood-seeking insects.
- ▶ Certified 51 deployable scientists and technicians to conduct operational risk assessments.
- ▶ Launched our Health Promotion and Wellness Campaign aboard USS BATAAN (LHD-5) with the support and participation of the Deputy Assistant Secretary of Defense for Clinical and Program Policy, the Assistant Secretary of the Navy (Manpower and Reserve Affairs), the U.S. Surgeon General, and the Deputy Surgeon General of the Navy.

NMCPHC leverages its capabilities to deliver products and services that measurably improve health throughout military medicine. We deliver excellence by exceeding our goals to prevent illness, improve health outcomes, reduce costs, and maximize force readiness. I am confident in my continued claim that NMCPHC's commitment to serving our Sailors, Marines, and their families remains as enduring as our warriors' commitment and sacrifice to our nation's freedom.

M. J. MACINSKI

Captain, Medical Service Corps
United States Navy
Commanding Officer



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



EXECUTIVE SUMMARY

The Navy and Marine Corps Public Health Center (NMCPHC) delivers a versatile range of public health services to enhance the readiness, resilience, and recovery of wounded, ill, and injured (WII) Sailors and Marines. The Center provides leadership and expertise to the Department of the Navy (DON) in occupational and environmental medicine; disease surveillance, prevention, and monitoring; public health emergencies; promotion of healthy behaviors and well-being; and risk communication. No other public health entity within the Department of Defense (DoD) houses these capabilities integrated at one location. NMCPHC supplies Navy Medicine with the scientific data analysis needed to make pivotal decisions regarding WII service members and their families, and offers continuous reach-back support for the Navy Bureau of Medicine and Surgery (BUMED), Navy and Marine Corps operational commands, and Military Treatment Facilities (MTFs).

NMCPHC WII Projects provide necessary analysis, surveillance, and health outreach capabilities to meet the comprehensive public health needs of WII service members. Our reports and programs generate actionable information, products, and services to enhance military health readiness. Overall, NMCPHC WII Projects improve Navy Medicine by:

- ▶ Developing and assessing program metrics to evaluate healthcare demands and services
- ▶ Collecting and analyzing healthcare data to better understand the impact of deployment health issues on military readiness

- ▶ Designing and implementing tailored health promotion tools that support physiological, psychological, emotional, and behavioral well-being for service members
- ▶ Executing innovative programs to protect deployed warfighters from illness and injury

The work of NMCPHC subject matter experts, epidemiological data analysts, and public health educators in support of WII Projects has created an impressive and expansive body of public health analyses, reports, and resources. The Center has established targeted programs for WII warriors while also developing robust public health surveillance, analytic, and promotion capabilities throughout participating directorates and departments. This report presents a comprehensive overview of NMCPHC's WII projects and associated calendar year 2012 (CY12) accomplishments, products, and services.



NMCPHC WII PROJECTS DESCRIPTION

In CY12, BUMED M9 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 NMCPHC WII 141 Project overall, particularly for funds directed to the epidemiological surveillance and health analysis initiatives. Reviewers concluded that 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 the assessment recommendations, the NMCPHC WII 141 Project was reorganized into four distinct projects: WII 141 Expanded Surveillance and Metrics Support, WII 141A Health Promotion and Wellness, WII 141B Health Hazard

Assessments, and WII 141C Navy Entomology Center of Excellence, henceforth referred to collectively as NMCPHC WII Projects.

These four projects bring great value to Navy Medicine public health initiatives through data-driven, evidence-based, population-oriented analyses, practices, and outreach programs. The Expanded Surveillance and Metrics Support Project analyzes Navywide WII programs to drive effective healthcare services, improve clinical outcomes, reduce healthcare costs, and deliver epidemiological surveillance to prevent disease and injury. This NMCPHC WII Project team conducts quantitative evaluations for the Access to Care (ATC), Quality of Care (QOC), Resilience, Surveillance and Screening, and Transition of Care (TOC) strategic priorities to support BUMED M9 goals shown in Figure 1. The Health

Figure 1: Strategic Goals for BUMED M9

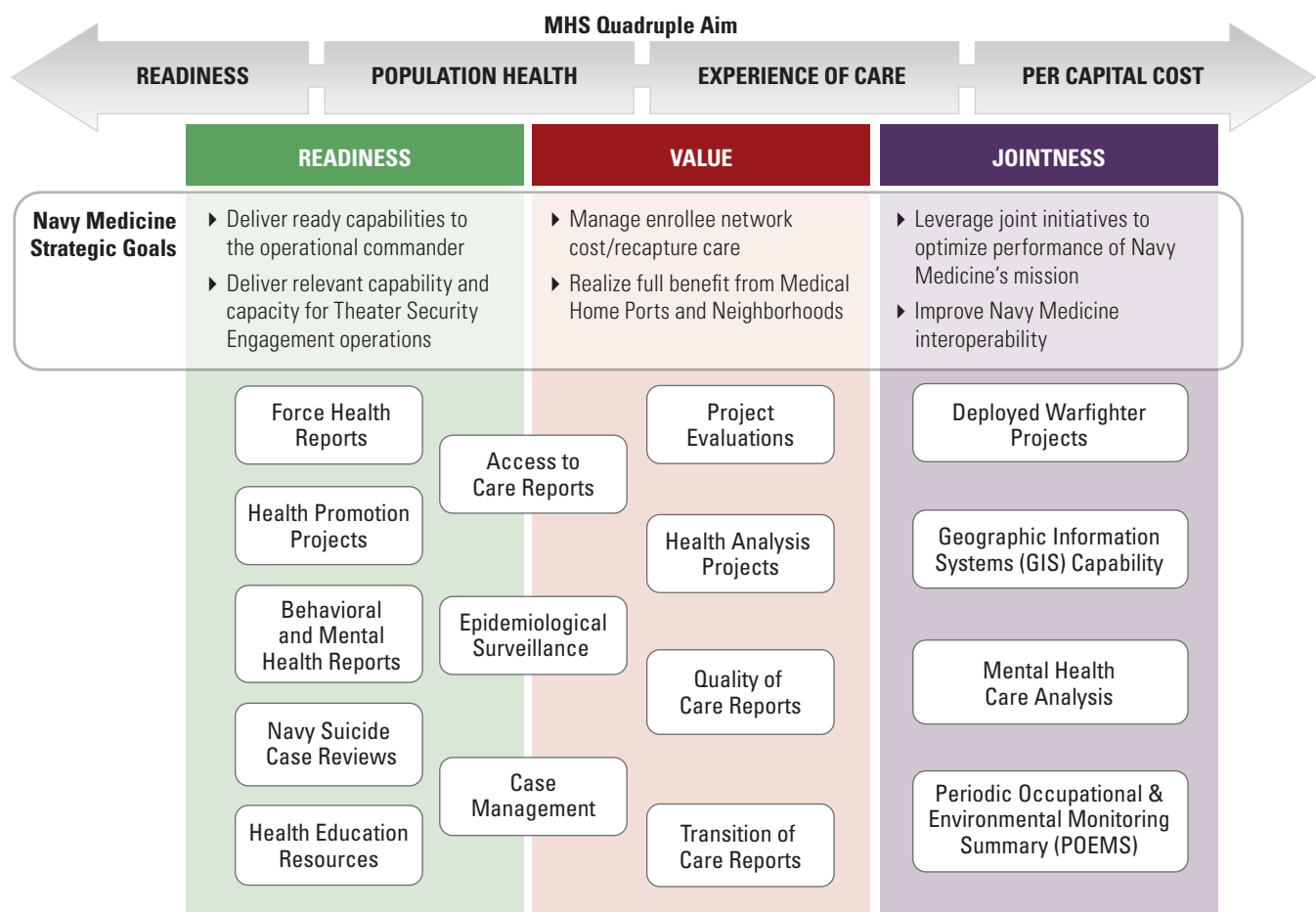
Access to Care	Enable timely access to comprehensive healthcare for warriors and their families
Quality of Care	Provide high quality and evidence-based healthcare for warriors and their families
Resilience	Build, strengthen, and sustain force health protection and readiness for Sailors, Marines, and their families
Surveillance and Screening	Identify and communicate deployment associated health threats for warriors and their families
Transition of Care	Facilitate and promote seamless transitions across the continuum of care

NMCPHC WII PROJECTS DESCRIPTION

Promotion and Wellness Project extends prevention efforts through evidence-based health promotion and wellness programs that build readiness and resilience, prevent illness and injury, hasten recovery, and promote healthy behaviors and lifestyles. Two deployed war fighter protection projects, Health Hazard Assessments and Navy Entomology Center of Excellence (NECE), respectively support the ongoing assessment of deployed health hazards and the prevention of vector-transmitted diseases through the development of effective insect control technologies.

NMCPHC determines its priorities and demonstrates its value by understanding and aligning its programs and services to strategic initiatives across DoD and the Military Health System (MHS). NMCPHC WII Projects align to Navy Medicine Strategic Priorities—Readiness, Value, and Jointness—and the MHS Quadruple Aim as depicted in Figure 2. NMCPHC WII Projects also support the National Prevention Strategy and Navywide strategic efforts including the 21st Century Sailor and Marine and Total Force Fitness.

Figure 2: NMCPHC WII Products and Services Alignment to Navy Medicine Strategic Priorities and MHS Quadruple Aim





WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

PROJECT OVERVIEW—LEADERS IN HEALTH INFORMATICS AND PUBLIC HEALTH SURVEILLANCE

Policy makers rely on accurate and prompt health analyses and epidemiological surveillance to make data-driven decisions that meet the needs of the WII population. Navy medical practitioners strive to implement evidence-based best practices to optimize patients' clinical care experiences and health outcomes—two strategic arms of the MHS Quadruple Aim. Through the WII 141 Project, NMCPHC's Health Analysis (HA) and EpiData Center (EDC) Departments enhance operational readiness, providing clinical health analysis and epidemiological surveillance to improve the efficacy of Navy healthcare (see Spotlight 1 to learn more about how epidemiological surveillance has improved Navy Medicine). The HA and EDC Departments collaborate with a variety of stakeholders across Navy Medicine to generate analyses that drive crucial decisions on healthcare policies, interventions, and programs. They lead as consultative experts in epidemiological surveillance, clinical health analysis, study design, and evaluation metrics.

2012 PROJECT ACCOMPLISHMENTS: HEALTH ANALYSIS

HA Department provides expertise and leadership to improve the value of Navy healthcare and operational force readiness through clinical health analysis, epidemiologic, and evidenced-based methods. They engage with multiple stakeholders across Navy Medicine, including BUMED, MTFs, and WII stakeholders. HA products drive more effective health care standards and practices to improve clinical outcomes and reduce costs. In 2012, HA continued to meet the health informatics needs of its customers, a capability that has garnered positive recognition from across the Services and government agencies including the Defense Centers of Excellence, U.S. Government Accountability Office, and the Institute of Medicine (IOM). Key accomplishments include:

- ▶ Evaluated, on behalf of BUMED M9, WII-funded projects throughout Navy Medicine.
- Developed and analyzed 11 ATC and 6 QOC evaluation metrics and study designs for other BUMED WII projects to assess project outcomes and ensure effective and cost efficient programs.
- Implemented efforts to develop evaluation metrics for WII projects that inform the Experience of Care arm of the MHS Quadruple Aim to ensure the WII projects are family centered, compassionate, and high quality.

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

Spotlight 1. Improving Healthcare for the Operational Forces

The WII 141 Project generates analytic statistical reports in support of Navy and Marine Corps operational commands, BUMED, and MTFs. These reports inform decisions based on epidemiological surveillance and clinical health analysis of service members' health status and healthcare treatments. EDC's and HA's capabilities have fundamentally improved Navy Medicine, allowing health practitioners and operational commanders to make data-driven decisions to optimize health protection and prevention efforts. Illustrative examples of WII 141 Project contributions include the capabilities to: (1) generate surveillance reports and targeted rosters for operational commands to address emerging public health issues and (2) evaluate healthcare treatment effectiveness to improve health outcomes and cost efficiency.

(1) EDC surveillance capabilities deliver pivotal information for operational commands. *Dr. Christopher Rennix, Department Head of EDC, explains, "EDC provides actionable data that informs our customers of the potential health impacts on our Marines and Sailors upon their return from deployment and provides a summary of health statuses and deployment-limiting conditions for those preparing to deploy."* For example, due to the concern of recent suicides, the Assistant Commandant of the Marine Corps (ACMC) requested the Department complete an analysis of Marines with multiple, possibly contraindicated, legally-issued prescriptions. Employing targeted data analysis and surveillance techniques, EDC provided a roster of all active duty Marines prescribed three or more psychotropic drug classifications to identify cases for further examination and possible suicide intervention actions. These types of tailored reports allow providers to identify and follow up with patients to assure they receive proper care for the entire treatment period, achieve recovery, and return to work.

(2) HA's ongoing analysis of access to care and delivery of evidence-based treatments has produced over seven years of data regarding enterprise-wide healthcare trends, and has demonstrated the challenges and successes of Navy Medicine in caring for returning forces. *CAPT Paul Rockswold, Department Head of HA, explains, "Our close collaboration with BUMED, regions, and MTFs allows us to provide timely, in-depth analysis and information that improves clinical quality for wounded warriors and their families and reduces overall healthcare costs."* For instance, HA-produced metrics examining patient wait times and staffing workload enabled leadership to better understand the impact of military operations on mental health clinical care and to identify areas in need of enhanced or redistributed mental health resources. The critical information provided through these analyses enables Navy Medicine to determine the resources required for addressing the health needs of returning service members and to evaluate the effectiveness of WII programs.

WII 141 surveillance reports and metrics capabilities support military readiness and enhance operational commanders', clinicians', and policy makers' insights into the deployment impacts of public health conditions. *As CAPT Rockswold describes, "Our forward progress in measuring the true impact of warrior care continues to provide health information that is unparalleled across the MHS, supporting targeted interventions and preventive measures that will yield maximum value in terms of continuous improvement in quality of care and the most efficient utilization of limited funding in a resource-constrained environment."* The WII 141 Project augments the Departments' analysis capabilities and enables data-driven decisions to promote the superior care of WII Sailors and Marines. *Dr. Rennix summarizes, "For the first time, operators now have public health data at their fingertips to understand how chronic, long-term health conditions impact operational readiness and the morale of the force."*

- ▶ Generated extensive quarterly reports on ATC, QOC, and TOC for the WII population to assess healthcare outcomes and cost efficiency, estimate healthcare demands, and inform resource allocation.
 - Revised ATC metrics to provide BUMED a comprehensive analysis of mental healthcare demands and optimize clinical and staffing resource allocation.
- Developed a new quarterly ATC metric to examine median days between referral to an outpatient clinic and the resulting appointment for service members. Directly assessed the amount of waiting time WII Sailors and Marines encounter at the MTF level and helped to expedite care.

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

- Analyzed 11 QOC metrics on four high volume, high risk, and high cost medical conditions: mild traumatic brain injury (mTBI), post-traumatic stress disorder (PTSD), major depressive disorder (MDD), and substance use disorder (SUD).
- Examined six TOC metrics on case management including analyses of the number of case managers administering care, the average number of service members that case managers see monthly, and the total number of case management encounters with service members.
- ▶ At the request of the Navy Surgeon General, supported case reviews of 2011–2012 Navy Medicine suicides, in collaboration with EDC and Health Promotion and Wellness (HPW) Departments.
- Provided comprehensive medical data and participated in the 2012 Navy Surgeon General Suicide Case Review to identify patterns, evaluate existing programs, determine potential intervention points, and assess data quality.
- Delivered final report to the Chief of Naval Operations, the Vice Chief of Naval Operations, and the Navy Surgeon General with recommendations for improving suicide prevention efforts.
- Provided key findings which the Navy Surgeon General shared through video teleconference with all Commanding Officers and Executive Officers across Navy Medicine.
- Lead suicide case reviews for the Chief of Naval Operations (OPNAV) 135 and the Chief of Naval Air Training (CNATRA).
 - Derived 18 evidence-based recommendations to minimize stressors and improve suicide prevention efforts.
 - Initiated ongoing assistance to CNATRA to implement recommendations.
- ▶ Developed evaluation study design and performance metrics for the Navywide Behavioral Health Integration Program (BHIP)-Medical Home Port (MHP). The Department's contributions to this program are highlighted in Spotlight 2.



Spotlight 2. Health Analysis Provides Data Consultation and Evaluation Services for the Behavioral Health Integration Program-Medical Home Port

BUMED's BHIP incorporates behavioral health services into MHP to facilitate accessible, comprehensive, in-house, and patient-centered care across Navy Medicine. HA led the initial BHIP-MHP evaluation, providing metric design, data collection, and statistical analyses. The evaluation determined the needs of program participants, examined clinical processes, measured health outcomes, and evaluated cost efficiency. The Department created templates to collect survey data and delivered reports to leadership to enable actionable results.

Navy Medicine will establish 80 BHIPs by 2016, and all will require evaluation during and after implementation. Recognizing the value of HA's services, BHIP leadership requested that HA lead survey metrics development, statistical data analysis, and program evaluation of Integrated Behavioral Health Coordinators (IBHC) throughout BHIP's expansion. In response, the Department's expert biostatisticians and epidemiologists created a metrics development plan and database to further assess the Navywide implementation of BHIPs.

HA is recognized as the leading expert on monitoring and evaluating clinical services and resources. The WII 141 Project has directly enhanced HA's capabilities to conduct sophisticated clinical data analysis and study design consultation. The resulting HA products and services enable Navy Medicine to determine the value of its healthcare programs and policies, and in turn, allocate resources to promote optimal healthcare delivery.

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

LIST OF PRODUCTS AND SERVICES: HEALTH ANALYSIS

This section provides an overview of the products and services produced by the WII 141 Project HA team for CY12.

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Suicide	Provided analytic support for Navy suicide studies that directly informed healthcare leaders and policy makers on program effectiveness and potential interventions to prevent suicide.	Naval Operations N135 Suicide Medical History Review Case review of 2010 Navy suicides to identify necessary improvements in policies and procedures regarding mental healthcare and suicide data collection
		Navy Surgeon General Suicide Case Review Case review of 2011–2012 Navy Medicine suicides to identify patterns, evaluate existing programs, determine potential intervention points, and assess data quality
		Naval Air Training Suicide Support Assessment to support suicide prevention for CNATRA that included literature and case reviews, questionnaire development, site visit coordination, six leadership briefs, 12 focus groups, and 18 recommendations for mitigating stressors
Behavioral and Mental Health	Completed analytic reports on mental healthcare demands across the WII population to address inquiries from U.S. Congress and Marine Corps leadership. Evaluated the effectiveness of and demand for behavioral health services to support programs focused on improving ATC through the establishment of patient-centered care and telemental health services. Addressed underserved WII populations in addition to broader beneficiaries of the MHS.	Assistant Commandant of the Marine Corps Mental Health Review Report in response to an inquiry from the ACMC to determine usage of and access to mental healthcare in order to inform policy decisions
		Mental Health Access to Care Analysis Series, Congressional Report Reports to analyze mental health ATC categories, including referrals, provider encounters, appointment types, prescriptions, and case management workload; provided in a series of three reports for U.S. Congress
		Behavioral Health Integration Program-Medical Home Port Evaluation Program evaluation to support BUMED BHIP through metric design, data collection, and statistical analysis
		TeleMental Health Demand Assessment Assessment of patient demand for mental health services to identify underserved locations and to inform decision makers that allocate telemental health technologies
Domain Metrics Assessments	Supplied extensive statistical analyses and data visualization reports detailing outcomes and trends in AOC, QOC, and TOC. Supported data-driven decisions on resource allocation and informed case management policies to improve the WII continuum of care from active duty to Veteran status. Discovered variation in case management reporting which can influence decisions based on the data, both under- and over-utilization.	Access to Care Quarterly Reports Report to provide analysis and trending results on mental healthcare access and clinical care efficiency metrics for the WII population
		Quality of Care Quarterly Reports Report to provide analysis and trending results on known high volume, high risk, and high cost conditions affecting WII Sailors and Marines—including mTBI, PTSD, MDD, and SUD
		Transition of Care Quarterly Reports Report to determine pertinent information on case-management issues and the demand for services among Navy Medicine beneficiaries

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
BUMED M9 Appointed WII Project Evaluations	Evaluated study methodology and clinical health outcomes for WII projects to determine the effectiveness and cost efficiency of programs that address WII health concerns.	Navy Medicine Hearing Conservation Program (WII Project #W139)
		Comprehensive Aesthetic Restorative Efforts (CARE) (WII Project #W163)
		CARE-Naval Medical Center Portsmouth (WII Project #W163A)
		Orofacial Pain Position (WII Project #W166)
		Navy Medicine's Reintegration and Education Program (WII Project #W184)
		Wounded Warrior Psychological Health Recovery (WII Project #W186)
		Naval Health Clinic New England Traumatic Brain Injury Program (WII Project #W190)
		Naval Medical Center San Diego Medical and Surgical Simulation (WII Project #W207)
		Naval Hospital Jacksonville Wounded Warrior Mental Health Rehabilitation Program (WII Project #223)
		Physical and Occupational Therapy Department Needs for Wounded Care (WII Project #W223)
		Prosthetics for Navy Medicine West (WII Project #W225)
		Functional Recovery Program for Post-Traumatic Stress Disorder and Traumatic Brain Injury 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)
TBI Assessment and Metrics Development	Conducted data analyses and completed reports on TBI prevalence and related healthcare needs to identify MTFs that require resources for WII warrior care. Standardized metrics to allow Navy Medicine to compare and assess TBI programs and care across the enterprise.	Navy Medicine East Traumatic Brain Injury Needs Assessment Assessment to determine head injury, mTBI, PTSD, SUD, and MDD demand and mental health clinic efficiency; request from the Navy Medicine East Special Assistant on WII Care
		Mild Traumatic Brain Injury Needs Assessment Assessment to evaluate mTBI demand at MTFs for Fiscal Years 2006–2011 (FY06–FY11), request from BUMED M9 TBI Program subject matter experts
		Traumatic Brain Injury Metrics Standardization Metrics to standardize operational and programmatic reporting for WII Programs related to TBI; collaboration with EDC
PTSD	Analyzed information in support of a Congressional mandate to study PTSD. Justified the level of resources needed to care for WII service members with PTSD.	Treatment for Post-Traumatic Stress Disorder in Military and Veteran Populations Data analysis in support of IOM PTSD Report to assess care for WII service members diagnosed with PTSD, including treatment location, duration of treatment, and categories of providers

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Healthcare Utilization and Needs Assessment	Assessed patient demands at MTFs to improve services provided to the WII population and to inform resource planners.	Comparison of Medical Care Utilization after Deployment Assessment to determine healthcare utilization in the four months after deployment, to include purchased care and comparison of naval operational units; request from Naval Medical Center Portsmouth provider
		Naval Hospital Camp Lejeune Manpower Health Delivery Study Needs assessment on eight primary conditions within the WII population to provide an estimate of encounters, cases, and demand relating to inpatient and outpatient cases within FY11; request from Navy Medicine East and Naval Hospital Camp Lejeune due to a March 2012 report from the Inspector General
SUD and Tobacco Cessation	Conducted data analysis and metrics development to assess and reduce substance abuse and tobacco use rates—two health behaviors that directly impede recovery among WII service members. Incorporated metrics into the Population Health Navigator Dashboard for customers across Navy Medicine to view and assess MTF performance.	Analysis for Force Master Chief Report to identify SUDs with co-occurring mental health diagnoses among active duty Navy and Marine Corps service members from FY08 through FY12
		Analysis for TRICARE Management Activity Office of the Chief Medical Officer Report to assess compliance with National Defense Authorization Act of 2010 requirement to provide all long-term SUD treatments within direct care system
		Tobacco Cessation Metrics Analysis of three tobacco cessation metrics developed by HA to improve the validity and reliability of Navy Medicine tobacco use data collection and fidelity
Sleep Health	Created data analysis report on sleep disorders and comorbidities for HPW to promote healthy sleep habits—an important factor that supports mental health and wound healing among the WII population.	Active Duty Sleep Disorders Analysis of sleep disorders and associated comorbidities to inform the development of health promotion materials; collaboration with HPW

2012 PROJECT ACCOMPLISHMENTS: EPIDATA CENTER

EDC programmers and epidemiologists conduct population health surveillance to improve the Navy's disease and injury prevention programs. Departmental experts supply near real-time reporting on changes in military health readiness resulting from in-theater exposures and changes in operational tempo. As part of its surveillance mission, epidemiologists within the Department analyze medical data to provide critical metrics and reports on many WII-related health topics, such as: disease outbreaks, antibiotic-resistant bacterial infections, mental health disorders, amputations, and suicide ideation. EDC has developed standard definitions for medical conditions and health risks to ensure sufficient resource allocation for the effective care and expedited rehabilitation of WII warriors. The Department's services and

products meet key WII stakeholders' needs to: develop, adapt, and validate customized population health measures; analyze data patterns and trends over time; conduct needs assessments; and provide metrics development and statistical consultation. Key accomplishments for EDC Department include:

- Identified behavioral health outcomes for eight distinct populations, including: Total Marine Corps; I Marine Expeditionary Force (I MEF); II MEF; III MEF; U.S. Marine Corps Forces Special Operations Command (MARSOC); Marine Forces Reserve (MFR); Navy Expeditionary Combat Command (NECC); and Naval Special Warfare Command (NSWC).
- Examined the prevalence of PTSD, MDD, suicide ideation, alcohol abuse, and TBI, as well as the number of service members who had two or more behavioral health encounters in a given month.

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

- Informed strategies to improve clinical practices, allocate resources to critical areas, and support policies to implement evidence-based practices at individual commands as developed by BUMED and broader Navy Medicine leadership.
- ▶ Continued ongoing surveillance of all service members deployed for more than 30 days “boots on the ground” for physical and mental health concerns in Deployment Health Assessment (DHA) and Mental Health Assessment (MHA) reports.
- Improved compliance rates of deployment health forms completion for the Navy and Marine Corps through quarterly Electronic Deployment Health Assessment (eDHA) Quality Assurance Reports.
- Responded to special request from United States Fleet Forces (USFF) Command for data support and outreach to improve Navy compliance with Post-Deployment Health Assessment (PDHA) and Post-Deployment Health Reassessment (PDHRA).
- Reported regularly, via the eDHA project, to USFF and NECC to track unit compliance, and enhanced Medical Readiness Reporting System reports.
- Contributed to improvements in PDHA reporting compliance; recognized by USFF for significant enhancements to these assessments.
- Developed and implemented the MHA for the Navy, Marine Corps, and Coast Guard, made available April 2012 to the Navy and Marine Corps through the eDHA.
- Designed an implementation plan for revising all three DHAs for BUMED M9. In December 2012, the MHA merged with other DHA forms to reduce the number of required forms service members complete, resulting in time and cost savings.
- ▶ Forecasted the timing and population levels of Marines returning from deployment using data analysis.
- Estimated total medical encounters at each MTF for WII-specific illnesses and injuries including PTSD, MDD, and TBI.
- Promoted effective resource allocation by identifying MTFs with heightened healthcare demands.
- ▶ Enhanced epidemiological surveillance efforts across DoD and DON through consultation and evaluation services.
- ▶ Innovated epidemiological surveillance using spatial analysis of health risks associated with deployment-related environmental exposures through new Geographic Information Systems (GIS) capability, as detailed in Spotlight 3.



Spotlight 3. The EDC Houses GIS Capability

EDC recently harnessed the power of GIS mapping to provide new epidemiological surveillance techniques that analyze environmental health risks commonly known to display important geographic patterns. Developing the capability to spatially analyze public health outcomes significantly strengthens military health surveillance and data visualization capacities within the DON.

EDC developed the GIS technique in response to DoD inquiries about open burn pit exposures in Iraq and Afghanistan. Using GIS, data analysts can geographically examine patterns of deployment-related exposures and health risks using sophisticated mapping techniques. EDC has the ability to create maps of military bases, hospitals, and other locations involving military personnel. They conduct risk analyses of targeted areas to guide preventive actions that mitigate negative health impacts from harmful environmental exposures.

Currently, EDC is using GIS to facilitate an environmental exposure model for Camp Lemonnier in Djibouti, on the Horn of Africa (pictured above). The project evaluates the role that particulate matter and meteorological patterns serve in promoting chronic respiratory problems, such as bronchitis and asthma, in Sailors and Marines. Lessons from the model are expected to improve future environmental health approaches, enhance military respiratory protection, and promote agile responses that minimize exposure-related illnesses and injuries among service members.

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

LIST OF PRODUCTS AND SERVICES: EPIDATA CENTER

This section provides an overview of the products and services produced by the WII 141 Project EDC team for CY12.

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
On-going Surveillance	Generated reoccurring reports on WII-related illnesses and injuries to provide current epidemiological surveillance and improve military health readiness.	Wounded Warrior Report for Secretary of the Navy Standard WII reports for the SECNAV to provide an overview of projects and reports completed each month
		Monthly Force and Fleet Health Reports Reports to identify behavioral health outcomes, including PTSD, TBI, MDD and SUD; leading source for Headquarters and Force and Fleet Surgeons to evaluate population health and assess trends
		Annual Injury Reports for United States Navy and Marine Corps Two reports using medical encounter records at MTFs to assess the number of injuries reported each year and the injury rates in subordinate commands
		Monthly Traumatic Brain Injury and Mild Traumatic Brain Injury Incidence Reports Data analysis and reports on TBI incidence in Navy and Marines; updated report reflects new case definitions and TBI severity categories for BUMED to identify changing trends and build policies
		Post-Traumatic Stress Disorder Quarterly Report Report on PTSD incidence rate covering all new PTSD cases from 2002 through 2012 for BUMED to identify changing trends and support policy decisions
		Monthly Post-Deployment Health Assessment / Post-Deployment Health Reassessment Screen Report Report to identify trends in overall certified PDHA/PDHRA and positive behavioral health screens for PTSD, MDD, TBI, alcohol dependence, and suicide risk; for BUMED, Fleet Forces, and Marine Corps
		Quarterly Electronic Deployment Health Assessment Quality Assurance Report Report to determine compliance rates for deployment health forms in Navy and Marine Corps; for Force Health Protection Quality Assurance Program Office of the Assistant Secretary of Defense for Health Affairs
		Quarterly Alcohol and Substance Abuse Incidence Report Report to determine prevalence of alcohol and substance abuse/dependence among Navy and Marine Corps service members; request from BUMED
Wounded Warrior Database	Completed departmental contributions to develop a Navywide database system to monitor and track WII service members. Upon contributions from external collaborators, the database will inform healthcare policies and ensure service members receive proper treatment.	Navy Wounded Warrior Registry Database registry content for WII Sailors and Marines based on coding and metrics guidelines to efficiently track the health of the Navy and Marine Corps WII population

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
BUMED M9 Appointed WII Project Evaluations	Assessed WII projects to provide subject matter expertise developing project outcome metrics. Assisted eight WII projects in implementing and reporting their metrics each quarter, and continued to support the development of metrics for six other WII projects.	Combat Trauma Registry Expeditionary Medical Encounter Database (WII Project #89)
		United States 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 and Coordination for Wounded Warrior Regiment (WII Project #95)
		Traumatic Brain Injury and Related Disorders Mobile Assessment Unit (WII Project #178)
		Traumatic Brain Injury Treatment and Cognitive Rehabilitation Program, Naval Hospital Camp LeJeune (WII Project #172)
		Integrated Disability Evaluation System (WII Project #W100)
Amputations	Provided an analysis and baseline for tracking war-related amputations and rate and source of infections.	Development of Amputation Metric Metric to provide retrospective assessment of war-related amputation and infections within the DON from 2001–2011
Behavioral and Mental Health	Conducted analytic reports of behavioral and mental health outcomes—including PTSD, MDD, TBI, and SUD—for multiple WII stakeholders. Enabled operational commanders and healthcare providers to make data-driven decisions on policies and practices that help treat and prevent deployment-related illnesses and injuries.	United States Marine Corps Headquarters Post-Traumatic Stress Disorder/ Traumatic Brain Injury Reports Reports on PTSD and TBI for the United States Marine Corps (USMC) to determine cases counts, rates, and trends of both mental health conditions
		Assistant Commandant of the Marine Corps Mental Health Review Report to provide incidence, prevalence, and ATC information on PTSD, TBI, SUD, MDD, and co-morbid conditions; response to ACMC inquiry
		Post-Traumatic Stress Disorder and Stimulant Report for Navy Bureau of Medicine and Surgery Report to identify PTSD cases from 2008–2011 with stimulant prescription in United States Navy (USN) and USMC service members
		Traumatic Brain Injury and Post-Traumatic Stress Disorder Report for Navy Bureau of Medicine and Surgery Report to determine PTSD and TBI encounters and incident cases by year from 2007–2011 in Navy and Marine Corps for BUMED M9
		Post-Traumatic Stress Disorder and Major Depressive Disorder Report for Sergeant Major of the Marine Corps Report to assess PTSD and MDD in active duty Marines from 2002–2011; for Sergeant Major of the Marine Corps
		Post-Traumatic Stress Disorder Report for the Master Chief Petty Officer of the Navy Report on PTSD and other behavioral health conditions in active duty and family members to support Congressional hearing; request from the Master Chief Petty Officer of the Navy
		Post-Traumatic Stress Disorder and Traumatic Brain Injury Before Involuntary Administrative Separation Report Report to determine prevalence of PTSD and TBI encounters before completion of Involuntary Administrative Separation; provided to Marine Corps Headquarters, Health Services

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Behavioral and Mental Health <i>(continued)</i>	Conducted analytic reports of behavioral and mental health outcomes—including PTSD, MDD, TBI, and SUD—for multiple WII stakeholders. Enabled operational commanders and healthcare providers to make data-driven decisions on policies and practices that help treat and prevent deployment-related illnesses and injuries. <i>(continued)</i>	Post-Traumatic Stress Disorder Follow-up Care Report Report to describe PTSD incidence and follow-up care among active duty Marines for 2011; request from Marine and Family Programs
		Assessment of Traumatic Brain Injury External Injury Cause Codes Analysis of TBI External Injury Cause Codes in ambulatory data to identify the most common injury for both Sailors and Marines; for BUMED
		Traumatic Brain Injury Report for Assistant Commandant of Marine Corps Report to assess all TBI from 2002–2012; provided for Marine Corps and individual MTFs; request from the ACMC
		Behavioral Outcomes Report for Medical Education and Training Campus Report to describe behavioral health outcomes and extended medication use among Medical Education and Training Campus members
		Report on Major Depressive Disorder and Alcohol Abuse in United States Marines Report to determine demographic characteristics of service members with MDD or alcohol abuse encounters for 2012; inquiry from USMC Operational Stress Control Program
		Report on Comorbid Post-Traumatic Stress Disorder, Major Depressive Disorder, or Anxiety and Alcohol/Substance Abuse/Dependence in Marines Report to identify Marines diagnosed with alcohol/substance abuse or dependence who were comorbidly diagnosed with PTSD, MDD, or anxiety from 2009 to 2011; for Marine and Family Programs
		Report on Alcohol/Substance Abuse among Active Duty Marines Report to provide incidence rates and medical encounter burden on alcohol and substance abuse/dependence among active duty USMC from 2011–2012; report for Manpower and Reserve Affairs Behavioral Health Branch
		Report on Comorbid Behavioral Health Conditions and Alcohol Abuse/Dependence Analysis of active duty Marines with alcohol abuse/disorder to determine which members were comorbidly diagnosed with other selected behavioral health conditions (PTSD, TBI, MDD, substance abuse, anxiety) throughout treatment; for the USMC Substance Abuse Program
		Behavioral Health Assessment for Marine Expeditionary Force 3rd Battalion, 5th Marines Analysis to identify behavioral health outcomes for 3rd Battalion, 5th Marines using deployment health assessments and medical encounter records
		Behavioral Health Conditions in I Marine Expeditionary Force Report to assess prevalence of Marines who are actively seeking treatment for selected behavioral health conditions in I MEF; inquiry from Force Surgeon of I MEF

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Behavioral and Mental Health <i>(continued)</i>	Conducted analytic reports of behavioral and mental health outcomes—including PTSD, MDD, TBI, and SUD—for multiple WII stakeholders. Enabled operational commanders and healthcare providers to make data-driven decisions on policies and practices that help treat and prevent deployment-related illnesses and injuries. <i>(continued)</i>	Treatment for Post-Traumatic Stress Disorder in Military and Veteran Populations Report on PTSD including incidence and prevalence information and PTSD screening on development health assessments to support IOM PTSD Report
		Behavioral Health Assessment of Individual Augmentee Detainee Guards for Space and Naval Warfare Systems Command Assessment to compare behavioral health outcomes for Individual Augmentee Detainee Guards deployed to Afghanistan in 2008 to all Sailors deployed to Afghanistan in 2008
		Psychotropic Medication Line List Report on psychotropic medication line list for Marine Corps Health Services to identify Marines receiving prescriptions over 90 days by major subordinate commands
		Construction Battalion Fleet Health Surveillance Report Report to determine behavioral health encounters and prevalence, use of psychotropic drugs, and positive screens on PDHRA among Navy service members in construction battalion
		Support for Navy Expeditionary Combat Command Embedded Mental Health Program Analysis to determine rates for behavioral health conditions prior to and after implementation of embedded Mental Health Program at Explosive Ordnance Disposal Units and Naval Construction Forces Commands
		Deployment Health Assessment Outcomes Report for Marine Reserves Report to identify behavioral health outcomes in DHA from 2008–2012 for Marine Reserves
Suicide	Completed suicide analysis; used reports to identify risk factors and prevention approaches for suicide vulnerability and ideation among WII warriors.	Naval Operations N135 Suicide Medical History Review Review of 2010 Navy suicide cases to identify necessary improvements in policies and procedures regarding mental health care and suicide data collection
		Report on United States Marine Corps Suicide Attempts Report on FY10 suicide attempts to identify risk factors and patient care histories for USMC Suicide Prevention Program
		Navy Surgeon General Suicide Case Review Case review of 2011–2012 Navy Medicine suicides to identify patterns, evaluate existing programs, determine potential intervention points, and assess data quality
Medical Injuries Reports	Supplied analytic data reports for Line Safety Officers and program managers to evaluate prevention efforts and to target injury prevention efforts for the following year. Provided the only method for operational line to assess the extent and types of injuries experienced by service members and treated by Navy Medicine.	United States Marine Corps Injury Report Report on USMC injuries in FY11; for the Safety Division, Headquarters of the Marine Corps
		Low Back Injury Report for Navy Personnel Command Report on low back injuries rates for 2007–2011
		Injury Analysis for New York University Report on acute injuries among recently deployed service members; in collaboration with New York University

WII 141 PROJECT: EXPANDED SURVEILLANCE AND METRICS SUPPORT

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
PDHRA Compliance Consultation	Provided consultation services and reports to improve PDHRA compliance across the DON.	Mental Health Assessment Report of Certified Forms Report to assess MHA-2 (PDHRA) completion rates among Navy and Marine Corps service members; request from BUMED
		Assessment for Healthy Patriots Program Analysis of PDHA and PDHRA to provide number of assessments completed and general wellness responses for Healthy Patriots Program
Deployment Health Assessments	Developed and maintained the eDHA to: (1) facilitate member communication with medical provider about deployment health concerns; (2) determine burden on medical support based on responses and requirements for referrals; and (3) provide line medical staff data to evaluate the impact of conflict on the overall health of the force.	Defense Health Assessment Form Revision for Navy Bureau of Medicine and Surgery M9 Revision guide to develop and implement the revision of all three DHA forms and incorporate MHA into the DHA process and within eDHA
		United States Marine Corps Post-Deployment Medical Referral Tracking Monthly report to track completion of medical referrals created by the PDHA and PDHRA for USMC
		Post-Deployment Health Assessment Support for USS BATAAN (LHD-5) Marines Evaluation support for PDHA survey data collection among redeployed Marines on the USS BATAAN (LHD-5)

WII 141 PROJECT—WAY FORWARD

Operational forces require accurate and responsive health analysis and epidemiological surveillance to plan, execute, and recover from military operations. Maintaining a robust public health analytic capability enhances military health readiness during changing deployment needs and operational tempos. WII 141 Project leaders will continue to provide the analytic and epidemiological expertise needed to inform medical and operational personnel of critical force health protection needs. Health data analysts stand ready to promote effective healthcare programs for WII service members through informative data analysis and surveillance activities. EDC surveillance experts plan to maintain efforts to monitor and report on the prevalence of illness and injuries across the force, including rapid responses and reports on emerging diseases and geographic analyses of environmental health risks. HA experts will continue to refine evaluative metrics and report on the healthcare quality, access, and transition issues that impact clinical practices and patient health outcomes. Both Departments intend to further advance the scientific understanding of key health conditions, such as PTSD, TBI, SUD, and MDD. Taken together, HA and EDC Departments will maintain direct surveillance and metrics support for the care of returning WII warfighters to enhance military readiness as new missions arise.

The WII 141 Project provides critical funding that directly enhances HA and EDC metrics development, data analysis, and

population health surveillance capabilities. Reductions in funds for the WII 141 Project would substantially reduce the data analyses and reports required to inform evidence-based care and program evaluations Navywide. Without the WII 141 Project, Navy Medicine would experience an 80 percent reduction in the capacity to produce high quality, comprehensive analyses and near real-time surveillance of critical disease threats. A reduction in capacity would undermine HA's and EDC's ability to provide a range of contributions such as: monitor disease outbreaks; examine the spatial distribution of environmental health threats; determine current force deployment health demands; assess clinical workloads; evaluate metrics and programs to improve patient care and experiences; and eliminate redundancies in healthcare. All of HA's ATC, QOC, and TOC Quarterly Reports and Mental Health reports, which provide crucial information to evaluate and assess WII population healthcare demands and services, would no longer be available. The EDC's ability to manage the Health Level 7 data stream for current surveillance projects would also be significantly impeded, and the analysis of deployment health data would be limited to monthly reports at most. Overall, without HA's and EDC's rapid reports and comprehensive analyses, agile responses to the emerging public health demands of WII service members would be severely compromised. Their services and products greatly benefit force health readiness. Therefore, future funding and organizational support is paramount to sustain the products and services created through the WII 141 Project.



WII 141A PROJECT: HEALTH PROMOTION AND WELLNESS

PROJECT OVERVIEW—LEADERS IN HEALTH PROMOTION AND WELLNESS

NMCPHC HPW Department delivers evidence-based products and services to promote physiological, psychological, emotional, and behavioral health for Sailors and Marines. Health promotion products and services generate valuable impacts that support force health readiness, while also addressing the “population health” and “per capita cost” arms of the MHS Quadruple Aim. According to the Centers for Disease Control (CDC) report, *Chronic Diseases—The Power to Prevent, The Call to Control: At a Glance 2009*, health promotion programs focusing on lifestyle behavior change generate a favorable return on investment of three to six dollars for every dollar spent on prevention. These savings represent a significant benefit to MHS and Navy Medicine given that more than 75 percent of growing DoD healthcare costs are due to preventable health, lifestyle, and chronic medical disorders. As the operational tempo draws down, effective and cost efficient health promotion strategies that enhance the readiness, resilience, and recovery of Sailors and Marines remains an important priority.

The WII 141A Project increases the Department’s capacity to meet its enduring and WII-specific missions by enhancing core HPW capabilities to support the readiness, resilience, and recovery of the WII population. The U.S. Navy defines resiliency as the “process of preparing for, recovery from, and adjusting to

life in the face of stress, adversity, trauma, or tragedy (U.S. Navy, “Navy Combat and Operational Stress Control,” December, 2010, Glossary-5.).” HPW products and services support the resiliency process and are applicable across the range of deployment health statuses shown in the continuum of health and wellness (depicted in Figure 3). HPW’s WII-augmented capabilities create tailored health promotion initiatives intended to boost the healing, recovery, and resilience of service members throughout the deployment cycle. WII-tailored health promotion products and services, drawn from evidence-based best practices, can be leveraged to address specific health needs of the WII population, such as proper nutrition, weight management, intimacy concerns, and the benefits of complementary and alternative medical therapies to hasten recovery and return them to full readiness.

In addition to generating health promotion initiatives for the WII population, the WII 141A Project supports efforts to strategically increase awareness of health promotion benefits and HPW throughout Navy Medicine. The Department strategically targets communication efforts towards key stakeholders across the DON, including commanding officers, medical personnel, case managers, WII stakeholders, and WII warriors and their families. The Department’s strategic planning and communication activities were initiated as part of the vital task to meet the findings and recommendations of the 2012 BUMED M9 Tier 2 Project Assessment. Activities addressing the tier assessment are further highlighted in the 2012 accomplishments.

WII 141A PROJECT: HEALTH PROMOTION AND WELLNESS

2012 PROJECT ACCOMPLISHMENTS: HEALTH PROMOTION AND WELLNESS

During 2012, the HPW Department continued to develop programs and resources for WII members, their families, and their caregivers that promote healthy living behaviors and comprehensive care for WII warriors. The WII 141A Project achieved the following key accomplishments:

- ▶ Developed and executed a Plan of Action and Milestones (POA&M) to address BUMED M9 Tier 2 assessment findings and recommendations.
 - Redesigned and launched the HPW website to engage stakeholders and increase the use of HPW products, services, and capabilities. Projected to receive an average of 2,247 visits and 13,811 pageviews each month in 2013 based on current Google Analytics reports.
 - Demonstrated accomplishments and capabilities through completion of the HPW Strategic Plan, NMCPHC Product Catalog, and NMCPHC Strategic Communications Plan. These products increase awareness of HPW programs and services through targeted outreach activities.
- ▶ Developed the HPW Campaign, consisting of seven critical health promotion sub-campaigns focused on improving health behaviors. Lifestyle and health behaviors have direct clinical care impact for the WII population, especially those who suffer from TBI, PTSD, and amputations. The HPW Campaign:
 - Addressed nutrition, weight management, tobacco use, fitness, injury prevention, psychological and emotional well-being (anger and stress management, suicide prevention, proper sleep), relationship issues, and use/misuse of medications, alcohol, and other substances.
 - Increased awareness among Navy and Marine Corps beneficiaries of the health promotion and prevention resources, tools, and programs offered by HPW.
 - Aligned with the 21st Century Sailor and Marine, the National Prevention Strategy, Total Force Fitness, and the MHS Quadruple Aim.
 - Formally announced HPW Campaign during an event aboard the USS BATAAN (LHD-5) attended by nearly 200 military and civilian guests. See additional details in Spotlight 4.
- ▶ Increased awareness of WII products and services by conducting outreach activities to the Fleet and Marine Corps.
 - Presented HPW WII products and services to 1,426 service members during seven HPW Awareness Days at operational commands to educate Sailors and Marines on health behaviors.
 - Received 33,826 visits and 97,135 pageviews for the HPW section of the NMCPHC website since the revised website launched in December 2012 through March 2013. This represents 42.58% of all traffic on the entire NMCPHC website.
 - Expanded NMCPHC's social media presence through weekly tips, monthly blog posts, and monthly tweets to reach thousands of Sailors and Marines, 302 NMCPHC Facebook Fans, and 8,342 BUMED Twitter Followers.
- ▶ Developed four webinars addressing health behaviors for the WII population to provide virtual health promotion training to operational commands for medical personnel.
 - Implemented to meet Annual Training Plan Schedule in light of DoD-wide budgetary restrictions on travel.
 - Provided a low cost alternative to in-person training that can be conducted more frequently and accessed online anytime, anywhere.
- ▶ Created 28 WII health education resources, including presentations, fact sheets, and articles, that are posted on the HPW website and have been shared with 45 medical personnel who implement health promotion initiatives, distribute resources, and provide services to a large population of WII service members.
- ▶ Conducted a Navywide health behavior needs assessment, surveying 210 members of the Case Management community, to guide the development of WII health behavior resources and address the ongoing needs of clinical/nonclinical case managers, WII service members, and their families.
- ▶ Provided a poster presentation at the 2012 Building Bridges between DoD and Department of Veterans Affairs Case Management Conference to showcase HPW and WII programs and services to over 200 case managers.
- ▶ Conducted, in collaboration with HA, a sleep disorders cross-sectional analysis to assess the prevalence of sleep disturbances and related comorbidities within the WII population.
 - Distributed the resulting report to 784 recipients at various MTFs, Wounded Warrior Battalions, Medical Hold Units, Marine and Family Programs, and the Navy Safe Harbor.

Figure 3: Continuum of Health and Wellness Model



- Created resources and educational products using the findings to raise awareness on positive behavior changes that mitigate sleep disturbances.
- ▶ Collaborated with the Defense Center of Excellence National Center for Telehealth and Technology to develop a proof of concept for a mobile device application to improve accessibility to the Navy Leader's Guide for Managing Sailors in Distress.
- ▶ Increased the participation rate for the Fleet and Marine Corps Health Risk Assessment (FMC-HRA) by 10% in 2012, and trained HRA Administrators throughout the DON to provide the web-based, anonymous 22-question lifestyle assessment.
- Coordinated with DoD Survey of Health Related Behaviors staff to share FMC-HRA data in support of the 2011 DoD Health Related Behaviors survey analysis. Confirmed that NMCPHC developed an excellent tool to support readiness and reduce preventable healthcare costs.
- Developed, in collaboration with EDC technology experts, a proof of concept for a mobile device application to augment the existing web version of the FMC-HRA. Expected to increase the accessibility of this tool to service members and thereby improve survey participation rates and quality of data for analysis.



Spotlight 4. HPW Campaign Launch Event

NMCPHC formally announced the HPW Campaign with a launch event aboard the USS BATAAN (LHD-5) on 2 October 2012. The 90-minute ceremony, attended by nearly 200 guests, featured notable military and government representatives including the Deputy Assistant Secretary of Defense for Clinical and Program Policy, the Assistant Secretary of the Navy (Manpower and Reserve Affairs), the U.S. Surgeon General, the Deputy Surgeon General of the Navy, and the Commanding Officer of NMCPHC. Following the launch announcement, guests were invited to browse an information exhibit featuring resources from NMCPHC and the HPW Campaign.

The HPW Campaign seeks to create awareness among WII Sailors and Marines, beneficiaries, and health care professionals of the health promotion and prevention resources, tools, and programs offered by the HPW Department to motivate healthy behavior change. *Deputy Surgeon General of the Navy and Vice Chief, BUMED, Rear Admiral Michael Mittleman noted that, "Today's campaign — the rolling out of the health and wellness campaign is an absolute strategic imperative for us. It's our opportunity to shape the lives of our Sailors and Marines, so that we can improve and maintain readiness in the U.S. Navy and the U.S. Marine Corps."* The comprehensive campaign resources enforce the understanding that prevention not only reduces health care costs, but it also increases the fitness and readiness of Sailors and Marines.

Integrating media, digital products, and partner outreach to promote the campaign and its resources helped to garner 4.1 million impressions through channels such as Facebook, Twitter, Navy Times, the Virginian-Pilot, and all four Hampton Roads affiliate television stations. The HPW Campaign launch generated 100 percent positive media coverage, creating awareness about the tools and resources available to increase fitness and readiness among Sailors, Marines, and beneficiaries.

WII 141A PROJECT: HEALTH PROMOTION AND WELLNESS

LIST OF PRODUCTS AND SERVICES: HEALTH PROMOTION AND WELLNESS

This section provides an overview of the products and services produced by the WII 141A Project for CY12.

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT <i>*HYPERLINKS</i>
Case Management and Provider Resources	Assessed the needs of case managers and WII service members to identify health behavior demands and develop targeted resources for the WII population. Identified relevant WII health promotion needs to inform follow-on analyses and health educational resources.	Case Management Needs Assessment Assessment to determine the ongoing needs of clinical and nonclinical case managers, WII service members, and their family members
		Case Management Resources* Presentation, overview, and webpage to identify the importance and necessity of assigning all WII service members a case manager from point of injury or illness through reintegration to active duty or civilian sector
		Case Management Article to detail the criteria for case management services and the services provided by HPW to meet the needs of WII warriors, their family members, and caregivers
		Stages of Change* Webinar to discuss the decision making process, how individuals move through the different stages, and practical applications of the Stages of Change Model to health behaviors
		Strategies to Manage Compassion Fatigue Article to educate caregivers about compassion fatigue including signs, symptoms, and mitigation strategies
Strategic Outreach to WII Stakeholders	Improved fleet awareness of WII products and services offered by the HPW Department and expanded social media presence on Facebook and Twitter. Re-launched the HPW WII webpage which acts as a central location for WII resources and is one of the most viewed webpages on the NMCPHC website.	Wounded, Ill, and Injured Programs Fact Sheet* Fact sheet to detail the various HPW WII resources available on the WII website
		Social Media for WII Outreach Weekly tips, monthly blog posts, and monthly tweets (abbreviated facts about HPW topics) to provide health behavior information on easily accessible platforms and promote discussions about health behaviors and HPW WII products and services
		Fleet Outreach Presentation of information on HPW campaign, including tailored WII products and services, during HPW Awareness Days to educate Sailors and Marines on health behaviors and increase knowledge and awareness of HPW materials
		Operational Health Promotion Unit Assessments Site visits to identify the health promotion needs of operational commands, promote WII-specific HPW products, assess how to improve WII-focused HPW services to the fleet, and establish a working relationship between NMCPHC and fleet units
Amputation	Obtained evidence-based data to support the development of resources to meet the healing, recovery, and resilience needs of WII amputees. Developed the report further for broader dissemination, and currently expanding the scope of the project to assess additional comorbidities based on recent discoveries.	Amputee Project Assessment to identify comorbid conditions in persons with amputations, including behavioral health illnesses, to organize and synthesize HPW WII products and services that may enhance treatment and care services; collaboration with EDC

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT <i>*HYPERLINKS</i>
Behavioral and Mental Health	Developed resources to assist in TBI symptom management, prevent suicide, and aid in resiliency building and mission readiness.	<i>Suicide Prevention*</i> Article on suicide prevention resources available to service members that identifies several risk factors and acute warning signs which may precede a suicide attempt
		<i>Traumatic Brain Injury Prevention</i> Article to discuss TBI prevention strategies and modifiable risk factors
		<i>Traumatic Brain Injury</i> Article to educate the WII population on key signs and symptoms of TBI and strategies for coping and recovery
		<i>Social Changes Due to Traumatic Brain Injuries</i> Fact sheet on the social changes of TBI to explain its effects on the individual and family members including social interaction, social integration difficulties, becoming a caregiver, and loss of income, identity, and social emotional status
Sleep Health	Educated service members about the importance of sleep to aid in quicker recovery, help build resilience, and improve quality of life. Prioritized healthy sleep promotion resources for WII warriors based on case management interviews and assessments.	<i>Sleep Resources*</i> Webpage to educate the WII population and their families on sleep problems
		<i>Health Behavior Support for Sleep Disturbances</i> Article to provide information on sleep disturbances and tips for having a good night's sleep
Substance Use	Developed educational materials and resources to support prevention efforts and help service members understand ramifications of unhealthy use of alcohol and/or prescription drugs as a coping mechanism or to relieve stress. Addressed negative effects of substance misuse and abuse on wound healing.	<i>Preventing Excessive Alcohol Use*</i> Article to educate WII members about tips for responsible drinking, the negative effects of excessive alcohol use and binge drinking on wound healing, recovery and resilience, underage drinking, drinking while pregnant, and alcohol impaired driving
		<i>Substance Abuse</i> Article on prescription drug abuse, the types of drugs most frequently abused, signs and symptoms of prescription drug abuse, and measures to help prevent abuse
		<i>NMCPHC HPW Fact Sheet on Alcohol*</i> Fact sheet on alcohol awareness to help WII service members, retirees, and family members to assess their alcohol use
		<i>Excessive Use of Alcohol*</i> Fact sheet on tips for cutting back on alcohol use
		<i>Alcohol Abuse and Drug Misuse Programs*</i> Fact sheet with ways to increase awareness, educational and training programs, and intervention resources for alcohol abuse and drug misuse; updated in 2013
		<i>No Dips and/or Butts (WII Version)*</i> Military tobacco cessation guide tailored to the WII population to focus on the negative impact of tobacco on wound healing; topics include personal costs, stress, TBI, and PTSD, and military resources specifically for the WII population

WII 141A PROJECT: HEALTH PROMOTION AND WELLNESS

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT ^{*HYPERLINKS}
Substance Use (continued)	Developed educational materials and resources to support prevention efforts and help service members understand ramifications of unhealthy use of alcohol and/or prescription drugs as a coping mechanism or to relieve stress. Addressed negative effects of substance misuse and abuse on wound healing. <i>(continued)</i>	<i>Tobacco Free Living: Gearing up for the Great American Smoke Out*</i> Webinar to increase awareness of Great American Smoke Out initiative and the new resources, tools, and educational opportunities provided by the DoD campaign Quit Tobacco—Make Everyone Proud
		<i>Tips to be Tobacco Free*</i> Article on tobacco cessation to provide 14 tips to consider when quitting tobacco use
		<i>Fact Sheet on Smokeless Tobacco*</i> Article to educate WII service members about smokeless tobacco products, dispelled myths, and provide resources for quitting
Healthy Eating and Active Living	Created resources to emphasize the importance of nutrition and fitness during recovery for WII Sailors and Marines and encourage service members to adopt healthy eating habits and active lifestyles to prevent illness and chronic diseases. Established a baseline and key components of the WII Human Performance Program framework for WII population utilizing warrior sports model (military framework), collegiate/professional sports model, and collegiate curriculum.	<i>Weight Management and Nutrition</i> Article to provide strategies for preventing weight-related health conditions and adopting healthy eating behaviors
		<i>Maintaining Your Weight During the Holidays*</i> Webinar to discuss weight management strategies and nutritional tools that aid in weight maintenance and how to foster the mindset needed for weight management success
		<i>WII Human Performance Program</i> Assessment of best practices, existing data and initiatives, and literature to develop a program focused on injury prevention, physical fitness, physical activity, functional movement, and nutrition/weight management in the WII population
Complementary and Alternative Medicine	Provided resources to facilitate effective pain management and inform service members about services that can be used in addition to traditional medical care to reduce pain and relieve stress and depression. Feedback from leaders and case managers at the Camp Lejeune Wounded Warrior Battalion indicated these are frequently requested by the WII population.	<i>Complementary and Alternative Medicine Resources*</i> Webpage on Complementary and Alternative Medicine (CAM) to provide resources and information on acupuncture, chiropractic, yoga, pet therapy, massage therapy, and web links to organizations providing these treatments
		<i>Pain Management Resources*</i> Webpage to educate WII service members about various evidence-based strategies for managing pain including the use of CAM for pain reduction
		<i>Chiropractic*</i> Article to discuss chiropractic services and products and the direct link to injury prevention, pain reduction, and enhancement of physical fitness
		<i>Acupuncture*</i> Article to summarize the benefits and usage of acupuncture including treatments for pain, nausea, stress, anxiety, sleeplessness, headaches, TBI, and PTSD
		<i>Pet Therapy*</i> Article to describe pet therapy programs and the direct link to improved health and wellness for WII Sailors and Marines
		<i>Massage Therapy*</i> Article to explain the benefits of using massage therapy to relieve pain, reduce stress, address anxiety and depression, support rehabilitative sports injuries, increase relaxation, reduce stiffness, boost immunity, control blood pressure, and aid in overall wellness

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT <small>*HYPERLINKS</small>
Complementary and Alternative Medicine <i>(continued)</i>	Provided resources to facilitate effective pain management and inform service members about services that can be used in addition to traditional medical care to reduce pain and relieve stress and depression. Feedback from leaders and case managers at the Camp Lejeune Wounded Warrior Battalion indicated these are frequently requested by the WII population. <i>(continued)</i>	Yoga* Article to discuss the benefits of yoga including chronic pain relief, improved concentration, and increased flexibility, endurance, and strength
Reproductive and Sexual Health	Provided practical tools, educational resources, and strategies to promote interpersonal and sexual health and wellness among WII Sailors and Marines.	Relationship and Intimacy Issues Article to detail the WII website resources available regarding interpersonal issues that Sailors and Marines may face upon returning home after sustaining combat/noncombat related wounds, illnesses, or injuries World AIDS Day* Webinar to educate health care providers on the prevalence of HIV in the Navy, the screening process, and how to address these healthcare concerns with service members

WII 141A PROJECT—WAY FORWARD

HPW Department adapts and expands traditional health promotion programs to meet the unique needs of WII warriors. The project provides Navy Medicine, as well as Fleet and Shore healthcare providers, with evidence-based programs, products, and services proven to enhance the health of service members. HPW contributes valuable educational and media resources to Sailors and Marines to help them make healthy lifestyle choices. Moving forward, HPW plans to develop and deploy a comprehensive training course targeted towards WII caregivers to provide the information and resources needed to enhance WII warrior care. Currently in development, a tailored WII HRA Tool will further enhance the ability of Sailors and Marines to make the right choices and prevent chronic diseases through generating individualized health risk reports for use by WII members and commanding officers. WII HRA data analysis will also improve evidence-based guidance for HPW health promotion and prevention efforts and identify the most pressing health risks and vulnerable groups within the WII population. Targeting resources towards populations and/or public health concerns with the highest potential for impact and value optimizes the readiness, resilience, and recovery of Sailors and Marines while also promoting cost efficiency.

HPW is the critical nexus between population health surveillance and strategic health promotion program and policy implementation. HPW serves as the conduit that translates and extends data-driven, evidence-based practices to WII warriors, their caregivers, and their families. Public health studies show the successful implementation of these programs can encourage healthy behaviors to enhance health outcomes, healthcare efficacy, and force health readiness. Health promotion initiatives are among the most empowering and effective tools used to improve Sailor and Marine readiness, health, resilience, and performance. Given the demonstrated value and utility of health promotion strategies, the HPW Department plans to continue expanding its core and WII-targeted products and services. As such, continued support for the HPW WII Project is essential. There has never been a more urgent need for health promotion leadership to define real solutions to the challenges facing the Navy and Marine Corps as they continue to promote operational readiness and superior care for the WII population.



WII 141B PROJECT: HEALTH HAZARD ASSESSMENT

PROJECT OVERVIEW—LEADERS IN WORKSITE RISK EVALUATION

Exposure to occupational and environmental stressors can have adverse health effects for deployed service members. The WII 141B Project analyzes occupational and environmental health surveillance data to conduct technically sound and scientifically defensible health hazard assessments that evaluate the health risks associated with environmental stressors faced by deployed warriors. Many of the environmental samples can be analyzed in theater by deployed scientists to provide operational commanders timely risk assessments to guide, control, and mitigate deployment hazards. These field expedient analytic methods are maintained and updated by NMCPHC for both air and water contamination. 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. WII 141B personnel provide technical and professional support for development of Navy preventive medicine policies and to Navy personnel who identify, evaluate, monitor, and respond to diseases, injuries, and environmental factors that threaten human health.

2012 PROJECT ACCOMPLISHMENTS: HEALTH HAZARD ASSESSMENT

The WII 141B Project team provides the technical and analytic expertise required to create risk assessments on potential environmental exposures of deployed troops. They test, validate, and calibrate field capable environmental sampling equipment and contribute to the policies and procedures that regulate their use. This year's highlights included:

- ▶ Completed the Navy's first ever Periodic Occupational and Environmental Monitoring Summary (POEMS) for Camp Lemonier, Djibouti. The POEMS will contribute to enhanced health screening surveillance and readiness while decreasing the likelihood of present and future illness for service members stationed in the Camp Lemonier vicinity.
 - Developed the skill sets and analytical processes to evaluate the tremendous volume of environmental data collected from site assessments, environmental samples, health care encounters, and other select data sources.
 - Identified the relevant data sources, refined the data elements, and established a repeatable methodology for compiling POEMS.
- ▶ Collected the data and completed the initial evaluation for a POEMS for Camp Fallujah, Iraq. The final POEMS is on target for completion in FY13 and will provide evaluation of the health risks associated with environmental stressors at this operating location.

- ▶ Validated the permeation system for testing and optimization of HAPSITE-ER gas chromatograph-mass spectrometer (GC-MS). This critical step will ensure the continued ability of field confirmatory and theater validation laboratory capabilities to provide operational commanders with timely risk assessments to guide the control and mitigation of deployment hazards for their troops.
- ▶ Administered four rounds of proficiency analytical testing for field portable analytical equipment. This testing ensured that deployable scientists and technicians demonstrated proficiency to conduct operational risk assessment.
 - Certified 20 GC-MS operators, 17 Fourier-transform Infrared Spectrophotometer operators, and 14 Ultraviolet-Visible Spectrophotometer operators as proficient and deployment ready.
- ▶ Provided reach back support to field deployed personnel on Occupational and Environmental Health Site Assessments, sampling and analysis plans, and data quality requirement development necessary to support health risk assessments. The expanded support from the WII 141B Project allowed FDPUMs to provide improved analysis and recommendations to operational commanders and support informed risk-based decisions about environmental exposures.
 - Advised Camp Lemonnier public health personnel on water quality, heat stress, and hazardous waste management.
 - Coordinated with the FDPMU Microbiology Component Manager on developing biological safety and bloodborne pathogens training and infectious waste handling and shipping.

WII 141B PROJECT—WAY FORWARD

The Health Hazard Assessment (WII 141B) Project provides enhanced medical surveillance products to operational commanders, concerned service members, healthcare providers, and other stakeholders to properly communicate the potential health risks stemming from military deployments. All forces deployed in support of overseas contingency operations—past, present, and future—are potential beneficiaries of this project. It is an ethical imperative that DoD continues to refine its deployment health surveillance program through projects like WII 141B.

The project will allow NMCPHC to significantly increase their production and publication of POEMS (at least six) in FY13. Current sites under POEMS evaluation include Camps Baharia, Castillo, Mercury, and Karmah in Iraq and Camps Leatherneck, Bastion, Tombstone, Barber, and Viking in Afghanistan.

Field-portable analytical equipment calibration will lead to the establishment of transportable calibration curves for over 130 toxic industrial chemicals common in the deployment environment. Through this effort, operational and tactical commanders can receive timely risk assessments to inform their decision-making for the control and mitigation deployment health threats. The project team will continue to support quarterly training rounds to ensure a cadre of deployable personnel supporting critical operational risk assessment functions.

LIST OF PRODUCTS AND SERVICES: HEALTH HAZARD ASSESSMENT

This section provides an overview of the products and services produced by the WII 141B Project for CY12.

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Periodic Occupational and Environmental Monitoring Summary	Established the foundation for subsequent POEMS and developed the skill sets and analytical processes to evaluate environmental data collected from site assessments, environmental samples, and health care encounters. Improved population health surveillance and provided medical practitioners, service-members, and other stakeholders with population-based risk assessments for discrete deployment sites.	Camp Lemonier POEMS Report to evaluate the health risks associated with environmental stressors experienced by deployed personnel at Camp Lemonier
		Camp Fallujah Analysis Initial collection and analysis on data related to the health risks associated with chemical, biological, and physical stressors faced by deployed warriors in Camp Fallujah
Field-Portable Analytical Equipment Calibration	Enhanced and updated the ability of FDPUMs to deploy modern equipment. Enabled field confirmatory and theater validation laboratory capabilities to provide operational commanders with timely risk assessments to guide the control and mitigation of deployment hazards.	HAPSITE-ER GC-MS Calibration Calibration of GC-MS to validate permeation system for testing and optimization



WII 141C PROJECT: NAVY ENTOMOLOGY CENTER OF EXCELLENCE

PROJECT OVERVIEW—LEADERS IN PREVENTING DISEASE TRANSMISSION

The negative effects on human health from biting insects and the diseases they carry present dangerous risks to the nation's warriors. Protection of deployed ground forces from disease-carrying insects requires the immediate, safe, and effective use of fast-acting insecticides and repellants. NECE supports ongoing programs developing insecticides, repellants, and application technologies and represents the only center of excellence in the world for public-health insecticide application technology development. NECE WII Project provides a direct, positive impact on deployed warfighters through new discoveries of safe chemistries, application techniques, and tools to better protect deployed warfighters from the persistent threat of blood-feeding insects and the diseases they carry.

Funding for the NECE WII Project supports six scientists integral to NECE's field testing experiments and insect control discoveries. The project also funds two unique technical specialists – a molecular entomologist and a materials scientist. The molecular entomologist works at the cellular level testing novel compounds and techniques for efficacy. The materials scientist brings years of experience in the final formulations and industrial production of new compounds. WII-supported scientists complement other NECE experts and have contributed to a productive and collaborative center.

2012 PROJECT ACCOMPLISHMENTS: NAVY ENTOMOLOGY CENTER OF EXCELLENCE

NECE WII Project staff provide specialized and unique capabilities that allow Navy entomologists to enhance and expand development and testing efforts for new insecticides and repellants. In 2012, NECE:

- ▶ Collaborated on 20 major projects with 24 scientists from federal agencies, academe, and industry such as: the CDC, U.S. Department of Agriculture (USDA), U.S. Agency for International Development (USAID), U.S. President's Malaria Initiative, U.S. Army, U.S. Air Force, Imperial College London, University of Florida, Rutgers University, and Vestergaard-Frandsen in Switzerland and Uganda. The collaborations resulted in new compounds and application methodologies that increase the protection for Sailors and Marines from harmful insects and resulting vector-borne diseases.
- Screened 909 insecticide compounds for efficacy against medically-important insects.
- Field-tested 22 new insecticide application machines (motorized sprayers) – four are pending National Stock Number assignment.
- Seven new insecticide application techniques were field tested for efficacy.

- ▶ Disseminated WII-supported research and development efforts through multiple media venues including technical bulletins, peer-reviewed journal articles, website publications, and a mobile phone application. Reports are printed, distributed, and posted on military and professional websites for use by deployed entomologists and technicians world-wide to better protect troops from insects that carry diseases.
 - Maintained mobile application for field use that provides users with over 14 years of insecticide application and insect control data. The app has been downloaded over 2,000 times.
 - Produced nine Technical Reports that present materials and methods for proper control of disease-carrying insects for use by public health professionals.
 - Published six peer-reviewed journal articles, and five more are under review. These studies are the result of many seasons of work from several studies, and their associated innovations.
- ▶ Processed four patent applications to gain intellectual property rights for the scientific discovery of unique and effective ways to control disease-carrying insects. Most significantly, one of the patent applications pending final approval is for a unique and effective way of controlling a new invasive species of mosquito. This major accomplishment is detailed in Spotlight 5.

WII 141C PROJECT—WAY FORWARD

Moving forward, the NECE WII Project aims to protect the health of our warriors through the ongoing development and testing of novel and effective technologies that combat blood-seeking insects and the diseases they carry. To accomplish these tasks, the team strives to continue collaborating with renowned government, industry, and academic partners. NMCPHC supports a new entomology detachment at the CDC in Atlanta to help lead the U.S. President's Malaria Initiative—a \$1.3 billion/5 year program to control malaria in 17 sub-Saharan African countries. CDC and USAID are now proposing that NECE field test novel compounds for use in Africa with overlapping benefits for deployed war fighters and reimbursable funding for NECE. This will pave the way for NECE to become a World Health Organization Collaborative Center. The addition of the WII science staff has been critical to the consortium's present success and will remain integral to the project's future accomplishments.



Spotlight 5. Recent Breakthroughs: Ribonucleic Acid Interference (RNAi) Patent

The WII 141C Project allowed NECE to make significant strides on a new molecular RNAi insecticide (patent pending) which has an immense potential benefit for the WII population. The RNAi insecticide controls specific mosquitoes at a molecular level — thus having no direct impact on mammals or other vertebrates. Developing a compound that specifically targets and silences insecticide-resistant genes represents an innovative control strategy to aid preventive medicine and public health personnel deployed in

support of our armed forces around the world. The multi-year RNAi insecticide experiment achieved a breakthrough discovery in 2012 that significantly increased the likelihood of final patent approval — identifying the technological delivery mechanism to directly impact, target, and eliminate mosquitoes. In partnership with the USDA Agricultural Research Service's Center for Medical, Agricultural, and Veterinary Entomology, NECE and the WII 141C Project team continue to identify and test specific genetic constructs to be incorporated into insecticides, such as the molecular RNAi, to create broader future impacts on military readiness.

WII 141C PROJECT: NAVY ENTOMOLOGY CENTER OF EXCELLENCE

LIST OF PRODUCTS AND SERVICES: NAVY ENTOMOLOGY CENTER OF EXCELLENCE

This section provides an overview of the products and services produced by the WII 141C Project for CY12.

FOCUS AREA	RETURNS/OUTCOMES	KEY PRODUCT
Vector and Disease Control	Discovered, tested, and reported innovative ways to protect deployed warfighters from health risks associated with disease-carrying insects.	Insecticide Compound Testing Results for efficacy testing of 909 insecticide compounds against medically-relevant insects to reduce the risk to our service members
		Annual Equipment Evaluation Evaluation of 22 insecticide dispersal equipment pieces submitted by six manufacturers to discern potential candidates for addition to DoD pest management/control program
		Field Testing Insecticide Application Techniques Results of field efficacy testing to assess seven new insecticide application techniques
		Integrated Vector Management Technical Reports Nine technical public-health reports to provide guidance on methods for control of disease-carrying insects that impact military readiness and our deployed troops
		RNAi Patent Application Patent pending for molecular RNAi insecticide to gain exclusive rights for the innovative method for controlling mosquitoes
Publications	Demonstrated the value of NECE's research by communicating the findings and results to the scientific community and providing highly visible reports for use in evidence-based public health policies and practices.	Hoffmann WC, Walker TW, Fritz BK, Farooq M, Smith VL, Robinson CA, Lan Y, 2012. Further evaluation of spray characterization of sprayers typically used in vector control. <i>Journal of the American Mosquito Control Association</i> , 28: 93-101.
		Miller DE, Khot LR, Hiscox AL, Salyani M, Walker TW, Farooq M, 2012. Effect of atmospheric conditions on coverage of fogger applications in a desert surface boundary layer. <i>Transactions American Society of Agricultural Engineers</i> , 55(2): 351-361.
		Wright J, 2012. Navy Entomology Center of Excellence and CDC join forces on global health protection. <i>International Journal of Pest Management</i> , 54: 253-254.
		Coy MR, Sanscrainte ND, Chalaire KC, Inberg A, Maayan I, Glick E, Paldi N, Becnel JJ, 2012. Gene silencing in adult <i>Aedes aegypti</i> mosquitoes through oral delivery of double stranded RNA. <i>Journal of Applied Entomology</i> , 136: 741-748.
		Farooq M, Salyani M, Walker TW, 2012. Droplet characteristics and near nozzle dispersion of cold and thermal fog. Pesticide Formulations and Delivery Systems: Innovating Legacy Products for New Uses. Symposium Paper, American Society for Testing and Materials International, Equipment subcommittee E35.22, Special Technical Publication #1558. 16pp.
		Bartlett-Healy K, Unlu I, Obenauer P, Hughes T, Healy S, Crepeau T, Farajollahi A, Kesavaraju B, Fonseca D, Schoeler G, Gaugler R, Strickman D, 2012. Larval Mosquito Habitat Utilization and Community Dynamics of <i>Aedes albopictus</i> and <i>Aedes japonicus</i> (Diptera: Culicidae) <i>Journal of Applied Entomology</i> , 49: 813-824.



THE MISSION AHEAD FOR NMCPHC

In today's operational tempo, service members are deploying more frequently, surviving severe injuries, and experiencing unique psychological stressors. It is expected that support needs for WII service members will endure even as current conflicts draw down due to the latency of some conditions and the long-term treatment requirements for mental health and other WII-specific medical conditions. Given these factors, military healthcare expenditures will likely continue to rise. The products and services provided by NMCPHC WII Projects will remain critical in addressing the healthcare needs of WII Sailors and Marines. In addition, NMCPHC WII Projects will continue to support opportunities to maximize Force Health Protection and operational mission accomplishments, improve clinical health outcomes, and reduce healthcare costs.

The Expanded Surveillance and Metrics Support Project will continue to evaluate the effectiveness and efficiency of WII-funded projects across Navy Medicine to support targeted resource allocation towards programs with promising returns on investments. Surveillance and analysis activities will continue to be coordinated to reflect the three phases of deployment—pre-deployment, deployment, and post-deployment. Coordinating activities across the deployment cycle optimizes force health beyond current war initiatives to meet ongoing and future missions. The Health Promotion and Wellness Project plans to continue expanding health promotion services to enhance evidence-based programs and meet the changing needs of WII service members due to operational tempo fluctuations. The Health Hazard Assessment WII Project will continue providing timely and important training to deployed preventive medicine assets conducting health threat assessments and completing POEMS. These assessments will continue to be mandated by the DoD for all ground forces deployment sites, necessitating future

support from the WII 141B Project. The NECE Project will continue innovating insecticide technologies and application methods to protect deployed service members from the threat of blood-feeding insects and the diseases they transmit.

Although having demonstrated value, the future of WII-supported capabilities, products, and services remains uncertain as NMCPHC cannot sustain these programs and capabilities unless existing WII funds are converted to NMCPHC's annual operating budget. Given the long-term health needs of WII warriors and their families, this population would greatly benefit from institutionalizing the products and services presently generated through NMCPHC WII Projects. The current reliance upon WII funds presents an untenable risk of losing crucial capabilities if funds are no longer available. To further complicate matters, the full-time equivalent (FTE) ceiling has forced the command to continue using contract staff in an attempt to meet WII Program goals and deliverables. Institutionalizing these projects by providing permanent base funds and increasing the FTE ceiling for WII billets will allow hiring of permanent civil service positions and help sustain the continuity and impacts from products and services provided through NMCPHC WII Projects.

NMCPHC WII Projects are making invaluable contributions to the health of Sailors and Marines. The capabilities developed through NMCPHC WII Projects have become an integral part of the public health mission of NMCPHC and BUMED. NMCPHC is fully committed to providing protection through prevention services and products to WII Sailors and Marines. It is our fervent hope that the contributions of NMCPHC WII Projects' products and services will be sustained through permanent funds, so the Center can maintain current capabilities and continue to provide enduring support for WII Sailors and Marines.

APPENDIX A: CONTACT INFORMATION—NMCPHC WII PROJECTS

WII PROJECTS	NMCPHC POINT OF CONTACT	EMAIL	PHONE NUMBER	DSN
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APPENDIX B: ACRONYM LIST

ACRONYM	DEFINITION
ACMC	Assistant Commandant of the Marine Corps
ATC	Access to Care
BHIP	Behavioral Health Integration Program
BUMED	Bureau of Medicine and Surgery
CAM	Complementary and Alternative Medicine
CARE	Comprehensive Aesthetic Restorative Efforts
CDC	Centers for Disease Control
CNATRA	Chief of Naval Air Training
CY	Calendar Year
DHA	Deployment Health Assessment
DoD	Department of Defense
DON	Department of the Navy
EDC	EpiData Center
eDHA	Electronic Deployment Health Assessment
FDPMU	Forward Deployable Preventive Medicine Unit
FMC-HRA	Fleet and Marine Corps Health Risk Assessment
FTE	Full-time Equivalent
FY	Fiscal Year
GC-MS	Gas chromatograph-mass spectrometer
GIS	Geographic Information Systems
HA	Health Analysis
HPW	Health Promotion and Wellness
HRA	Health Risk Assessment
IBHC	Integrated Behavioral Health Coordinator
IOM	Institute of Medicine
M9	Wound, Ill, and Injured code at BUMED
MARSOC	Marine Corps Forces Special Operations Command
MDD	Major Depressive Disorder
MEF	Marine Expeditionary Force
MFR	Marine Forces Reserve
MHA	Mental Health Assessment
MHP	Medical Home Port
MHS	Military Health System
mTBI	mild Traumatic Brain Injury
MTF	Military Treatment Facility
NECC	Navy Expeditionary Combat Command
NECE	Navy Entomology Center of Excellence

ACRONYM	DEFINITION
NMCPHC	Navy and Marine Corps Public Health Center
NSWC	Naval Special Warfare Command
OPNAV	Office of the Chief of Naval Operations
PDHA	Post-Deployment Health Assessment
PDHRA	Post-Deployment Health Reassessment
POEMS	Periodic Occupational and Environmental Monitoring Summary
PTSD	Post-Traumatic Stress Disorder
QOC	Quality of Care
RNAi	Ribonucleic Acid interference
SUD	Substance Use Disorder
TBI	Traumatic Brain Injury
TOC	Transition of Care
U.S.	United States
USAID	U.S. Agency for International Development
USDA	U.S. Department of Agriculture
USFF	United States Fleet Forces
USMC	United States Marine Corps
USN	United States Navy
USS	United States Ship
WII	Wounded, Ill, and Injured



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