

# NAVY MEDICINE LIVE

THE OFFICIAL BLOG OF U.S. NAVY AND MARINE CORPS HEALTH CARE • 2011 & 2012 WINNER OF BEST NAVY BLOG

[Home](#) | [About](#) | [Disclaimer](#) | [Navy Medicine News](#) | [Navy Medicine WebSite](#) | [I AM Navy Medicine](#)

Written on DECEMBER 14, 2011 AT 8:30 AM by [PROSS](#)

## NAMRU-2 Pacific Responds to Marshall Island's Dengue Fever Outbreak

Filed under [UNCATEGORIZED](#)

(NO COMMENTS)

By Lt. Dustin Harrison, Research Department, Naval Medical Research Unit 2 Pacific, Pearl Harbor Hawaii



NAMRU-2 Pacific responded to the Marshall Island's first Dengue Fever outbreak in over 15 years.

You may have heard this story; a few weeks ago a story was printed in regional papers from a Radio New Zealand International broadcast about three cases of dengue fever in the Republic of the Marshall Islands (RMI). Dengue fever is a debilitating viral infection transmitted through the bite of an infected mosquito. The RMI Secretary of Health, Justina Langidrik was quoted as saying that three cases had been confirmed and these individuals were sick enough to require hospitalization.

In a matter of hours of this story's release, a deluge of emails began to fill my inbox

and others, all asking for assistance for what was at the time a small outbreak. The outbreak began to grow and shortly the emails turned into a series of daily conference calls with subject matter experts from the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), and the U. S. Embassy in Majuro, RMI. By week's end, as the numbers of cases grew daily, so did the number of participants on the conference calls. At one point I counted no less than 42 participants on the calls and emails concerning this outbreak, with members from the Joint Staff, Office of the Secretary of Defense, Department of the Interior, Department of State, and more. The email string read like alphabet soup, with PACOM, PACFLT, JTFHD, USAPHCRP, USAKA, USARPAC, TAMC, USAID, OFDA, HHS, CDC-GDD, ASTHO, the list goes on. A humanitarian effort was underway and we were going to be part of the effort; the U.S. Naval Medical Research Unit No. 2 (NAMRU-2) and Navy Environmental and Preventive Medicine Unit 6 (NEPMU6) were asked to go to RMI and spray for mosquitoes.

From a junior officer's perspective it was interesting and educational to see how DoD gets involved in humanitarian assistance, and to see and listen to the inner-workings of our "business".

NAMRU-2, the oldest of the Navy's overseas research labs, conducts infectious disease research, surveillance, and outbreak response in the PACOM AOR which includes the islands

### Navy Medicine Video

Navy Medicine is a global healthcare network of 63,000 Navy medical personnel around the world who provide high quality health care to more than one million eligible beneficiaries. Navy Medicine personnel deploy with Sailors and Marines worldwide, providing critical mission support aboard ship, in the air, under the sea and on the battlefield.

### Navy Medicine Social Media

[twitter](#) Follow us on Twitter

[facebook](#) Join us on Facebook

[issuu](#) Read our publications

[flickr](#) View our photo stream

[YouTube](#) Watch our videos

### Navy Medicine Live Archives

[March 2015 \(4\)](#)

[February 2015 \(16\)](#)

[January 2015 \(12\)](#)

[December 2014 \(17\)](#)

from Hawaii to South East and East Asia, and dengue fever is a focus of our research. We support operational and deployed U. S. Forces to reduce and eliminate diseases which can be mission abortive. We are also very heavily involved in promoting global public health and this outbreak response is core mission requirement.

It took a few days, but we finally received the go-ahead. At the request of the government of the RMI, and working closely with CDC's epidemiologists, entomologists, and the Dengue Branch in Puerto Rico and the WHO, we sent a five man vector control team to the island of Majuro to assist in mosquito identification, control, and capacity building, which included teaching the local Marshallese to identify and apply pesticides. The NAMRU-2/NEMPU-6 team was led by NAMRU-2 Entomologist Lt. Ian Sutherland, and the team landed on Majuro November 4.

Other members of the combined team that arrived in Majuro included one preventive medicine technician (PMT) from NAMRU-2, and three PMTs from NEPMU-6. We were joined by three personnel from the U.S. Army Public Health Command Region Pacific, Camp Zama, Japan, and six Marshallese volunteers.

The first step to controlling a dengue fever outbreak is public education. Dengue fever is a virus transmitted through the bite of an infected mosquito. Avoid mosquitoes and you can avoid dengue. The RMI Ministry of Health had already initiated an island-wide clean-up campaign to reduce the sources where the mosquitoes breed, which are usually artificial containers that fill with water. The vector control team helped the CDC-WHO team provide educational brochures to people, even going house-to-house with information.

The second step to reduce dengue transmission is to control the mosquitoes. Source reduction is important as well as applying pesticides to kill the larval and adult stages of the mosquitoes. It's difficult to control mosquitoes on a tropical island during the rainy season. The people on the island of Majuro rely on large containers to catch rain water for a variety of uses when clean water is needed so source reduction is difficult. Covering an entire island is long, hard, dirty work.

The mosquitoes which transmit dengue fever are found everywhere in the RMI, and one of their favorite places to breed is in old tires since water pools inside of them very efficiently and stays for a long time. Spraying the tire piles found on the island is time consuming, and wearing a respirator and NWU's in near 100o F weather is not for the weak even when you have an 11 person team doing the work. Along with the spray-ops, the team also conducted mosquito surveys.

The numbers of dengue infections has now increased to the multiple hundreds. The tests to confirm those initial results are being done by the CDC-Dengue Branch, located in San Juan, Puerto Rico, which has confirmed that the outbreak is due to infection with the dengue 4 virus (DEN4; there are four viruses capable of causing dengue numbered 1-4). Infection with the dengue virus causes a debilitating flu-like illness, however, on occasion, when infected with a different dengue serotype, the disease can progress to life-threatening hemorrhagic fever or shock syndrome. To date, no deaths have been reported from this outbreak, although a few people have come down with symptoms of dengue-hemorrhagic fever. It turns out that about every 5 years a new dengue serotype sweeps through the Pacific causing massive outbreaks like this one. Quick intervention is the best plan to limit the spread of the disease.

[← Next post](#)

[Previous post →](#)

[November 2014 \(11\)](#)

[October 2014 \(15\)](#)

[September 2014 \(20\)](#)

[August 2014 \(14\)](#)

[July 2014 \(13\)](#)

[June 2014 \(8\)](#)

[May 2014 \(11\)](#)

[April 2014 \(9\)](#)

[March 2014 \(14\)](#)

[February 2014 \(7\)](#)

[January 2014 \(7\)](#)

[December 2013 \(7\)](#)

[November 2013 \(12\)](#)

[October 2013 \(7\)](#)

[September 2013 \(14\)](#)

[August 2013 \(13\)](#)

[July 2013 \(11\)](#)

[June 2013 \(22\)](#)

[May 2013 \(15\)](#)

[April 2013 \(14\)](#)

[March 2013 \(14\)](#)

[February 2013 \(14\)](#)

[January 2013 \(12\)](#)

[December 2012 \(11\)](#)

[November 2012 \(11\)](#)

[October 2012 \(7\)](#)

[September 2012 \(9\)](#)

[August 2012 \(12\)](#)

[July 2012 \(13\)](#)

[June 2012 \(17\)](#)

[May 2012 \(22\)](#)

[April 2012 \(14\)](#)

[March 2012 \(13\)](#)

[February 2012 \(14\)](#)

[January 2012 \(13\)](#)

[December 2011 \(13\)](#)

[November 2011 \(20\)](#)

[October 2011 \(22\)](#)

[September 2011 \(12\)](#)