

*CDR Timothy Jiggins, named the 2015 EHO Responder of the Year, provided the following narrative detailing his emergency response experiences as an Environmental Health Officer at Federal Occupational Health (FOH) in the Washington, DC area.*

My name is CDR Timothy Jiggins, and I am a Certified Industrial Hygienist and Registered Sanitarian assigned to Federal Occupational Health (FOH). The mission of FOH is to improve the health, safety, and productivity of federal employees. This non-appropriated agency within the HHS Program Support Center works in partnership with federal agencies nationally and internationally to design and deliver comprehensive occupational health solutions for federal employees. FOH has a long-standing interagency agreement with the U.S. Agency for International Development (USAID) Office of Foreign Disaster Assistance (OFDA) to provide training, equipment, and technical assistance regarding chemical/biological/radiological/nuclear/explosive threats. OFDA is the federal agency responsible for leading the U.S. Government's response to disasters overseas. USPHS Commissioned Officers assigned to FOH have served in several roles on numerous OFDA Disaster Assistance Response Teams (DARTs). I deployed to West Africa twice -- in the fall and winter of 2014 -- and below is a description of my first tour of duty.

On August 4, 2014 OFDA activated an Ebola DART and I assumed the position of Staff Safety & Health Officer (SSHO). The purpose of the DART was to manage planning, logistics, administrative, and operational support in the affected countries and to coordinate other critical areas of the interagency response to the Ebola emergency. I flew to the National Capital Region the next day, met my teammates, trained and equipped them against blood-borne pathogens, and then deployed with the initial wave of the DART, arriving in Monrovia, Liberia on August 8, 2014.



Figure 1 PPE training at Embassy Monrovia

One of my primary tasks was to train and equip DART members to protect themselves from blood-borne pathogen exposures such as Ebola virus disease (EVD). I completed the written exposure control plan, developed procedures to repatriate personnel and equipment, and advised DART members and leadership on infection control during particularly risky operations, such as visits to Ebola Treatment Units (ETUs) or health care facilities. I worked with Foreign Service Health Practitioners at the three embassies (Monrovia, Conakry, and Freetown) to devise plans and marshal resources to quarantine exposed individuals and isolate and transport suspected Ebola virus patients. With virtually no local medical resources available in the affected nations, we repeatedly revised DART contingency plans and procedures as passenger flights dwindled and commercial medical evacuation firms ceased operations in the region. Ultimately the Department of State entered into a contract with Phoenix Air Group to perform medical evacuations from West Africa, which greatly simplified matters. As the SSHO I also managed situations such as a DART member reporting a fever (generally the initial symptom of EVD), a DART member with severe insect bites and rashes, and a confirmed EVD case at the Ministry of Health and Social Welfare who might have been in contact with DART members.

My work also included traditional environmental health practices such as the assessment and management of DART exposures to food, water, and vector-borne illnesses. Malaria, typhoid fever, and other diseases were common in this region, with Liberia and Sierra Leone still recovering from a generation of civil war. In Liberia the electrical grid covered just a few square miles of the capital, water distribution was by truck in just a few urban areas, solid waste disposal was mostly open dumping, and single overwhelmed and poorly maintained sewage treatment facility served a few limited areas.



Figure 2 Fueling station in Paynesville

The DART Safety and Security Officer (SSO) and I worked closely to manage safety and security risks facing DART members in Liberia, Guinea, and Sierra Leone. In the face of nationwide curfews, spontaneous and organized protests, community roadblocks, attacks on aid workers, and other physical dangers, we maintained constant situational awareness of DART members' locations, several times freezing them in place or calling them back to safe havens as the security environment changed. We also developed formal written travel, fire, and evacuation plans; inspected vehicles, work areas, and lodging; patrolled field locations and the surrounding communities to characterize safety & security threats. Frequent tests and drills were employed to protect the safety of DART members. I kept an embassy Emergency and Evacuation (E&E) radio in my room, a local cellphone and international i-phone in my pocket, and travelled out of town with a satellite phone and sometimes a walkie-talkie.



Figure 3 Inspecting rental vehicle for safety and reliability

USPHS Officers assigned to FOH serve as OFDA's technical experts on matters related to chemical/biological/radiological/nuclear/explosive agents. In this role, I assisted the DART and embassy Press Officers by providing technically correct information to the public, worked with DART Logistics Officers to ensure health workers had access to adequate personal protective equipment, and advised the embassy on matters ranging from the safe removal of potentially infectious vomit to technically reviewing proposed acquisitions of disinfection equipment. In early September I accompanied the DART Programming Officer on a trip to rural Bong County and provided technical advice regarding heat stress, water supply, waste removal, and infection control during a visit to the ETU under construction. While upcountry I also took the initiative to assist the DART Civil-Military Liaison by evaluating two potential sites for a U.S. Navy clinical diagnostic laboratory. After the lab was operational, patients at the Bong ETU suspected

of having the Ebola virus could be tested and possibly cleared within mere hours, instead of waiting days for a truck to drive the samples to the capital, Monrovia. This allowed patients who tested negative for the Ebola virus to be quickly released from the Ebola treatment unit, reducing their risk of contracting the disease.

I spent a significant amount of time conducting health risk communication within the DART and the embassy. The day after my arrival I was requested to hold a 'town hall' style meeting with embassy employees. I used plain English to explain technical information to over 200 local and expatriate embassy staff. The meeting was so well received that the embassy requested I be available for 'office hours' to answer staff questions on a walk-in basis. Another risk communication channel was an informal 'lunch counter' network that developed between me and the cafeteria cashier. She would field Ebola questions from embassy staff who wished to remain anonymous or who could not leave their job post, and each day when I came to buy some pepper soup or a cup of coffee she would ask me their question. In a more formal manner I also assisted the embassy clinic with several additional group Ebola talks and produced a written risk communication aid for DART members to use when speaking with families and friends concerned about their well-being. In the end, risk communication took up more of my time than I had anticipated.

While Engineers, Nurses, Veterinary Officers, and others sometimes serve in similar force health protection roles, Environmental Health Officers are uniquely qualified to excel in these positions. We are jacks of all trades who can discuss fire escape routes, malaria prevention, and respiratory protection in the same conversation. I find working with USAID OFDA and deploying on DARTs to be particularly satisfying because sooner or later I get to use every tool in my EHO toolbox.