MRIGlobal Testimony

Before the

United States Senate - Committee on Appropriations

November 12, 2014

"U.S. Government Response: Fighting Ebola and Protecting America"

This written testimony is provided on behalf of MRIGlobal, a non-profit research and development institute, by Dr. Thomas Sack, CEO. MRIGlobal is grateful for the opportunity to provide insight to the Committee about our experiences providing solutions that will assist the U.S. response to the global Ebola crisis. Specifically we will address: a) who MRIGlobal is; b) the operational needs for this threat within our area of expertise; c) approaches and proposed solutions; d) existing resources and capabilities that can be brought to bear immediately; and e) longer term issues and needs. Our testimony will focus only on areas where MRIGlobal has experience and expertise. We would be happy to provide more detailed information to the Committee if desired.

MRIGlobal – INTRODUCTION AND CURRENT CAPABILITIES

Since 1944, MRIGlobal has brought practical solutions to complex technological challenges facing government and industry, applying scientific expertise to the full spectrum of research and development. As an independent, not-for-profit corporation, MRIGlobal delivers innovative thinking and unbiased results. MRIGlobal headquarters are located in Kansas City, Missouri with significant facilities that operate under federal and private contracts in the states of Maryland, Kansas, Virginia, Florida, and Washington, DC. In addition to this laboratory capability, MRIGlobal operates the National Renewable Energy Laboratory (NREL) in Golden, Colorado, and has facilities overseas that perform work on behalf of select government agencies. MRIGlobal employs over 450 highly skilled individuals to conduct this complex research and development around the world.

MRIGlobal has extensive experience in the field of bio-threats and analysis. Most important to the current crisis, our scientists and engineers led the design, development, construction, deployment and operation of mobile facilities and laboratories on behalf of the Department of Defense in some of the most challenging locations in the world. These mobile facilities are discrete, rugged, made to industry standard, and self-contained within multi-purpose CONEX containers for ease of transport. They have been customized for multiple missions including the containment of pathogens and chemicals, analysis of threat materials, and in addition can house off-the-grid power units, additional workspace, and living quarters.

These portable laboratory units currently exist and have been proven force multipliers in the field. These laboratories can be repurposed, outfitted to specification, and trans-shipped to meet operational needs anywhere in the world within a matter of weeks. Due to the decrease in operation tempo in other theaters, the current agency owners have agreed to transfer this asset to other Federal government agencies that would benefit from this unique capability. Inquiries and permissions for interagency transfers are currently being worked at the agency level.

CURRENT NEEDS IN THE FIGHT AGAINST EBOLA

Patient Transport Capability: With more than 4,000 US military personnel deploying to Liberia as well as hundreds of other Federal government assets from the US Department of State and Health and Human Services, the footprint of the Federal government will be sizeable. Although the mission of the US Army is NOT to deliver care, the potential exists for exposure to Ebola by US personnel. Because of this risk, there is a need to evacuate potential Ebola casualties from out of theater. This has been identified as a significant barrier to aid workers deploying overseas as well. To date, there is extremely limited capacity to safely evacuate infected individuals. Only one company with two single patient planes is currently used for this mission. However, this problem is not exclusive in the current context of Ebola. As witnessed in the recent past with Severe Acute Respiratory Syndrome (SARS), the H1N1 Influenza pandemic and the recent Middle East Respiratory Syndrome (MERS), the threats from emerging infectious disease will continue to impact Federal government interests around the globe. Having a safe, efficient, and scalable capability to evacuate patients back to the US is a critical need.

Diagnostics: One of the most challenging aspects of the current Ebola outbreak is rapid diagnosis. Currently, it may take hours or even days before results are known from patients presenting to healthcare facilities with signs and symptoms of Ebola. This is particularly important in West Africa where multiple diseases, including malaria which is endemic, present with similar symptoms. Allowing healthcare workers to rapidly isolate Ebola patients and separate them from non-Ebola infected patients is important to decrease exposure and rapidly institute treatment protocols. One of the key elements is the lack of laboratory capabilities within the countries of West Africa. As a result, specimens travel great distances to reference laboratories for diagnosis, thus delaying isolation and treatment**.**

Expedited Processing to Accelerate Response: Despite the acuity of the current outbreak, Federal government contracting vehicles move much slower than the spread of the virus. In layman's parlance, "Ebola moves at outbreak speed, while bureaucracy moves at its own". To move with all promptness, agencies need to make use of the flexibility the FAR currently allows in acquisitions during times of urgent need. Government and commercial agencies need contracting mechanisms that limit control gates, expedite reviews, and accelerate the selection

process. Current processes add considerable time necessary to mobilize existing resources and solutions. Some examples of the bureaucracy burden include interagency agreements to transfer property such as mobile laboratories and delays in speeding public-private partnerships that allow for private sources to fund needed capabilities, such as "contained" transportation.

SOLUTIONS

Robust deployable laboratories: MRIGlobal recognizes the application of mobile laboratories as a key component in the fight against Ebola. Customized mobile laboratories offer convenience, durability, and flexibility to meet the current need. From the ability to provide rapid, in theater diagnostic results to safely transporting exposed and/or infected patients under containment conditions, mobile laboratories offer a solution to pressing issues. Previous US investments may be quickly leveraged with the cooperation of federal agencies and a willingness to proceed with great urgency.

Contained Transportation – In response to the Federal government's need to increase its capacity to transport exposed and/or infected patients, mobile laboratories may be configured to provide a safe and secure solution. Modular patient transport systems operate on multiple aircraft platforms, segregating infected patients by containment and further protecting the crew from contamination. MRIGlobal has designed and is prepared to immediately begin fabrication of modular patient transport systems that include an independent power supply, filtered ventilation, and a number of engineering controls to ensure that patients are comfortable during treatment in a completely sealed environment.

Long Term

Surge Capacity: We recommend co-location of mobile diagnostic laboratories with medical facilities both in the United States and West Africa to provide rapid surge capacity when required and standby capacity for use in future outbreaks. Mobile diagnostic laboratories offer medical facilities a supplemental mass triage capability in the event of a large-scale infectious disease outbreak. These mobile laboratories may augment state public-health laboratories during outbreaks and may be configured to address future outbreaks of other emerging infectious diseases.

Sustained Investment: Sustained investment by the Federal government is imperative in the battle not only against Ebola, but other emerging infectious diseases. Development of appropriate diagnostic surveillance systems and countermeasures are necessary to identify and treat emerging infectious diseases previously ignored by the private sector. For example, in recent years we have seen emergence of SARS, MERS, Dengue, Chikungunya, as well as Ebola. These are no longer just obscure diseases experienced in far-off lands, but present an ongoing

global threat. Federal investments should focus on translational science in infectious diseases and advanced development of relevant technologies.

In conclusion - MRIGlobal is in a unique position to support the effort to partner with the Federal government to address the Ebola global health crisis. MRIGlobal's expertise and experience allows facilitation of the rapid deployment of mobile laboratories to provide diagnostic support and safe patient transport of exposed and/or infected individuals.