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"Fighting Ebola: A Ground Level View"

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Chairman Smith, Ranking Member Bass and distinguished members of the subcommittee. On behalf of International Medical Corps, one of only a small handful of international NGOs treating Ebola patients in West Africa, I would like to thank you for inviting me to testify today. My statement addresses the emergency response to the Ebola virus epidemic in West Africa and the status of health conditions at the ground level.

International Medical Corps is a global, humanitarian, nonprofit organization dedicated to saving lives and relieving suffering through health care training and relief and development programs. Its mission is to improve the quality of life through health interventions and related activities that build local capacity in underserved communities worldwide. By offering training and health care to local populations and medical assistance to people at highest risk, and with the flexibility to respond rapidly to emergency situations, International Medical Corps rehabilitates broken health care systems and helps restore them to self-reliance.

My remarks today will largely be confined to our operations in Liberia and Sierra Leone—where more than two-thirds of all Ebola cases and over three-quarters of all Ebola-related deaths have been reported. I will also refer briefly to conditions in Mali, where we are seeing an upsurge of infections.

Our response to the Ebola outbreak has been robust. By the end of this month we anticipate having a total staff of about 800 in Liberia and Sierra Leone, of which 90 percent are African

nationals. By year's end we expect this number to reach 1,000 working in four Ebola Treatment Units in Liberia and Sierra Leone.

When the first Ebola cases were detected in the region in late 2013, International Medical Corps was already operational in Sierra Leone, providing community level health care, mental health care, and support in the fight against malnutrition. Given International Medical Corps longstanding work and familiarity with the West Africa region, where we have operated health and humanitarian assistance programs since 1999, we learned of the Ebola outbreak almost immediately, and monitored the pace of the disease closely.

Between mid-June and mid-July, the number of confirmed cases of Ebola in Sierra Leone grew from fewer than 20 per week to more than 50. During the second half of July, the number of confirmed cases reported in Liberia also increased. After immediate discussions with our field teams and also with partner agencies to assess needs and gaps, we realized the epidemic was moving out of control.

By this time, we had already deployed teams to Sierra Leone to work with local NGOs as part of a community-level campaign to raise awareness about Ebola. The day after Sierra Leone President Ernest Bai Koroma declared a state of emergency, August 1st, we ordered a rapid assessment of local conditions and triggered our highest category of emergency response. We also determined the more urgent task was no longer raising public awareness but treating those who had contracted the virus. Our Emergency Response Team arrived in Sierra Leone soon after and since then has worked vigorously to contain the epidemic .

In Liberia, we employed our highest category of emergency response and ordered a rapid assessment of conditions in early August. Our Emergency Response Team arrived in Monrovia 72 hours after Liberian President Ellen Johnson declared a state of national emergency in the country. What our team found on the ground in Liberia confirmed that urgent action was required. In a few short months, fallout from the Ebola outbreak had brought the country's already fragile health care system to the brink of collapse. Previously busy hospitals and clinics were empty, with both staff and potential patients too frightened seek treatment for routine health issues for fear of being infected with the virus. Rather than risk infection, mothers shunned life-saving vaccinations for their children, and if their child became ill, all too many believed the safer option was to not seek treatment at all.

For International Medical Corps, coordination in emergency response is crucial to success. In these critical circumstances, we reached out to key actors, such as the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and USAID even before we deployed our own teams. Once on the ground in Liberia, we immediately began coordinating our work with other groups responding to the Ebola crisis, particularly Liberia's

Ministry of Health and Social Welfare, as well as representatives of USAID's Disaster Assistance Response Team (DART), WHO, the CDC and. other NGOs.

As part of an Incident Management System established to tackle the Ebola outbreak, International Medical Corps quickly agreed to manage and provide the necessary staff for an Ebola Treatment Unit (ETU) built by Save the Children in the Suakoko District of Bong County, about a four-hour drive north of the capital, Monrovia. Médecins Sans Frontières (MSF) graciously trained our key staff who would be operating the ETU. The Ministry of Health provided us with a cadre of national health workers that would staff the ETU and the management of Cuttington University provided their dormitories to house our staff, as well as other administrative buildings. We are thankful to all for their support.

We admitted our first patients to the Bong County ETU on September 15th. Currently, the facility is staffed by a team of 17 expatriates and 161 Liberian nationals. We are gradually building up to 70 beds and a staff of around 230, of which 90 percent are African nationals. As of Nov. 14, the Bong County ETU had admitted 279 patients. To date, 73 patients have died, 134 patients suspected of having Ebola have been discharged after tests for the disease came back negative, and 34 are currently receiving care (26 confirmed, 11 suspected cases awaiting lab tests). A total of 36 patients have been discharged as recovered.

I would like to acknowledge the dedicated and courageous international and African national staff working in our treatment centers. They have come from inside Liberia and outside – including physicians and nurses from many parts of the United States, Europe and Africa. Our staff is comprised of doctors, nurses, technicians, specialists in water, sanitation and hygiene, logisticians, mental health professionals, custodial workers, and members of burial teams.

To date, our Bong County ETU remains one of just two in Liberia operating outside of Monrovia. Our operations there involve isolating and treating patients, providing them with counseling, caring for the remains of those who succumb to the disease and operating an ambulance service dedicated to transporting suspected Ebola patients to the ETU and returning those home who have either recovered or tested negatively for the virus. We are also assisting in the reintegration of those returnees to communities that may be anxious about their return, and working with local NGOs on patient referrals.

After discussions with the Ministry of Health, WHO, the CDC, DART and the U.S. military, the U.S. Navy established a laboratory at Cuttington University, adjacent to our Bong County ETU. The presence of this laboratory and its ability to turn around the results of blood test for Ebola quickly has made a major difference to our work. It has also saved many lives by allowing those who test negative for the disease to leave the ETU far sooner than previously—cutting the wait time for results from as long as five days to a matter of 5-7 hours. I want to take this

opportunity to express my personal thanks to the U.S. military for establishing the laboratory in Bong.

International Medical Corps anticipates opening a second ETU with 100 beds in Kakata, Margibi County, which borders Bong County to the southwest, by the end of November.

In Liberia, International Medical Corps will also establish mobile technical support units comprised of Ebola clinical specialists as well as experts in mental health and psycho-social support, logistics, site management and water, sanitation and hygiene. These units will deploy to partners' sites, providing them ongoing training, guidance and start-up assistance as they establish their own ETUs in the country. .

In addition, International Medical Corps will maintain an urgent-response team of skilled senior staff (both expatriate and national) that can deploy quickly to fill short-term gaps should an ETU have urgent staffing needs. International Medical Corps will also be operating an ambulance dedicated solely fto transport health workers who become infected to the United States Public Health Service-run Mobile Medical Unit from anywhere outside of Monrovia. The ambulance would be staffed by our trained ambulance teams.

In Sierra Leone we are preparing to open a 50-bed Ebola Treatment Unit in Lunsar on Nov. 25, and a 100-bed ETU in Makeni on Dec. 11. They are funded by USAID and the British government. A laboratory will also be built in Makeni. The ETUs will ensure that health care providers (doctors, nurses, community health workers, midwives, and traditional birth attendants) and water, sanitation and hygiene specialists, are formally trained on infection control protocols, EVD case management, and/or PPE usage. International Medical Corps will also be managing and supervising two to four 10-bed screening and referral units (SRU) to ensure optimal patient care and infection control.

On November 8, International Medical Corps opened a training center, located on the grounds of Cuttington University in Bong Country, Liberia, to train staff of international and national organizations who will be treating Ebola patients. Physicians and nurses coming into direct contact with Ebola patients will receive up to 12 days training, while other essential skilled technical staff, such as logisticians and water and sanitation engineers, will receive 7-10 days. Among those we are training are members of a U.S. Public Health Service team who will staff a 25-bed Ebola Treatment Unit in Monrovia dedicated to treating health workers who have been infected with the disease during the course of their work treating others. A similar training center will be established in Sierra Leone before the end of the year.

Such hands-on training is the key to protecting health workers who must operate in an environment where all know the Ebola virus is present. Strong guidelines and regulations are important, but they must be combined with hands-on training to be truly effective.

In Mali, together with Plan International, we are developing a training program to help prepare that country to respond to an Ebola outbreak. Discussions are underway to establish a training center in Bamako that will provide didactic and practical training for health care professionals and community members working in the areas of infection control, contact tracing and case management. We project the training program will begin by the end of November.

Procedures, Protocols and Practice

In its 30 years of providing humanitarian assistance to those in need, International Medical Corps has worked in more than 70 countries in some of the world's toughest, most dangerous environments, but had not previously encountered the Ebola virus or treated patients infected with it. However, our experience of working consistently in challenging, high-risk conditions taught us to move carefully, expect the unexpected and to err on the side of caution when weighing risk as we prepared to open our first treatment unit. We consulted with staff from Médecins Sans Frontières to draw on the depth of their experience and the guidelines and protocols they had developed in treating Ebola patients during previous outbreaks in Africa. We also reviewed guidelines and protocols from the CDC and WHO.

We learned quickly that treating Ebola patients is a labor-intensive endeavor that demands exceptionally strong logistics to maintain the flow of large quantities of supplies, including personal protective equipment (PPE) for the staff, bedding and medications for patients, as well as disinfectant and water to keep the treatment unit safe and clean. For example, most PPEs can be used only once, then are incinerated to prevent possible infection. We require approximately 840 PPEs per week per ETU to comply with guidelines established to ensure the safety of our staff. We follow a ratio using 3 expatriate doctors per 50 patients, 8 expatriate nurses per 50 patients, 4 local physician assistants per 50 patients, 24 local nurses per 50 patients, and 2 consumable PPEs per patient.

To treat Ebola patients effectively, we require a staff of about 230 to operate a 70-bed treatment unit. This is a staff per patient ratio of over 3:1. Ebola treatment requires higher than normal staff levels to reduce the risk of mistakes that could potentially endanger both patients and staff. One common practice in our ETUs is for members of our teams to work in pairs—what we call a "buddy system." For example, two physicians or two nurses make every decision that in a regular setting would be made by one on their own. Each "buddy" is constantly checking the personal protective equipment of the other and that the delivery of care is running correctly. The "buddy system" is also used when removing a PPE, a procedure that can carry a high risk of infection if not done properly. To further diminish risk, we have also added one more Shift Supervisor, whose task is to make sure each "buddy team" is following the prescribed protocols and to monitor the overall movement of the team and the treatment it is

delivering to our patients. Our staff follow very specific and meticulous, step-by-step donning and doffing protocols.

These protocols are demanding and arduous, requiring personal discipline, concentration and patience on the part of all involved. They are needed because the danger to staff can be very high. We are painfully aware that as of middle of this month, more than 560 health workers had been infected with Ebola in the course of their work. Of these, 320 have died. In Liberia, Ebola has been nicknamed "the nurse killer".

I am pleased to report the strict guidelines and protocols we have implemented have been successful. We have been able to both protect and treat health workers at the Bong facility. Actually, one of the patients we admitted and treated was a Liberian nurse infected while caring for Ebola patients at another facility. She has recovered and is now working at our ETU.

Our protocols require that PPEs worn by our staff cover the entire body. No skin can show. We quickly learned that wearing a bulky, impermeable PPE with as many as three layers of protection in West Africa's high humidity with temperatures of 95 degrees means that staff can only work relatively short periods of time—usually between 1 and 2 hours maximum—inside the unit's restricted area before being rotated and replaced by another team.

In addition to the ETUs, a new approach is to be implemented in Liberia and Sierra Leone that we believe will help contain the Ebola virus. Community Care Centers are being established enabling suspected Ebola patients to be removed from their homes and relocated inta community-based center where they could be isolated and provided with palliative care without the danger of infecting family and other potential care-givers in the home. Each Community Care Center would have approximately 10 beds where patients could await testing. A patient testing positive for Ebola could be transferred to an ETU for treatment while those who test negative would be allowed to return home. We would support this concept as long as the health workers serving in such centers receive both full training and are equipped with the same PPEs as those used in ETUs. The centers should also need to be linked to—and supported by—an ETU, acting as de facto satellites to that ETU.

Funding, Needs and Support

We are grateful for the timely and generous funding we have received from USAID's Office of Foreign Disaster Assistance (OFDA), which enabled us to open our first ETU in Bong County and to prepare our staff training facility nearby.   OFDA also funded the ETU nearing completion in Lunsar, Sierra Leone. Other government donors have come forward as well to address the crisis, as have some private foundations and corporations. However, generating public donations, which are necessary to support our efforts to fight Ebola, has been a challenge.

As we continue to increase our presence in both Liberia and Sierra Leone for what we believe will be a prolonged fight to contain the Ebola virus in West Africa, our needs will grow accordingly. Put simply, we need three things: people, commodities, and money. We need to continue the recruitment and training of staff and to build a “human resources” pipeline. Conditions to facilitate this—which include travel to and from the affected countries, procedures and systems to protect and treat health workers—must be ensured and implemented as soon as possible.

By commodities, I mean everything from PPEs to disinfectant, to vehicles for transportation, mattresses and bed clothing. Many of these items can only be used once because of the need to contain the spread of the disease.

The fight to contain Ebola and prevent future outbreaks will require a substantial investment. While we welcome the president’s emergency request to Congress to combat Ebola in West Africa, based on our experience in fighting this disease on the ground, we would recommend that the $1.4 billion allocated for International Disaster Assistance be increased by $200 million to $1.6 billion. We recommend that an additional $48 million be added to the Economic Support Fund for a total of $260 million. The math is pretty basic: assuming there are 27 ETUs regionally, and 120 Community Care Centers, we anticipate it would require about $1.6 billion for the next 6 months to bring the disease under control. We will also need to consider the secondary impact of the outbreak—the added costs of food, security, and loss of economic activity are estimated at $500 million. Rebuilding the health care system and maintaining an adequate disease surveillance system could run an additional $600 million.

What Works

Mr. Chairman, I would now like to briefly share some of our lessons learned of what we know works. I believe this will help highlight several key areas of focus as we move forward.

First and foremost, we need to contain the disease at its source in west Africa. For that to happen, we have learned several factors must be in place. One of these includes having operational ETUs staffed by well-trained health professionals.

Community Care Centers, if well-staffed and equipped, could help limit the transmission. A robust referral system between the care centers and ETUs, as well as between ETUs could take advantage of available bed capacity that now exist in some facilities and alleviate pressure of other ETUs that are overloaded. This can help reduce the wait, time, transmission rate and

mortality rates. Limiting the spread of the virus in the community is essential to the containment plan. Therefore, a focus on community sensitization, including education, awareness and outreach to build a trusting environment is of utmost important.

Second, building local capacity by carrying out training and supervision of local personnel provides countries with the needed tools and mechanisms to to respond on their own during outbreaks. The approach to this should be comprehensive and include the various components that are essential to containing, preventing and treating Ebola—from infection control and prevention, contact tracing, case management and treatment, to safe burial.

Third, we must focus on strengthening coordination of all actors – the UN, internationaland national governments and NGOs. To turn the tide of this epidemic, we need to work together and use the strengths of all stakeholders involved.

Fourth, expansive data collection and rigorous data analysis are essential in order to build an accurate picture of Ebola containment and spot any need for new responses. This information must be shared among all involved in a timely manner.

What is Needed Going Forward

As we have stated above when describing our response, the most critical challenge is addressing the scarcity of health workers needed to treat patients and staff ETUs that are currently in operation and those now being planned and built.

We face a severe shortage of adequately trained health professionals, both national and international. The difficult work environment, the personal risk, the need for 21 day self-isolation in some circumstances, all make it difficult for us to recruit volunteers. Health care workers also want to be assured that there are clear plans and procedures in place for possible evacuation and treatment should they fall ill. This has been slow in coming. The growing restrictions on travel to and from West Africa will only isolate the affected countries further, compromise the supply chain and inhibit efforts to recruit qualified staff. These factors will further enable the severe outbreak to continue.

Once recruited, the training of health workers and first responders continues to be a major need. This includes training of staff working in a treatment units, at community care centers, and on burial teams. It also includes ambulance attendants, community workers and educators. The training being conducted by the CDC, the training to be conducted by the U.S. military, training being led by NGOs, including International Medical Corps must be supported. We, at International Medical Corps, are willing to train ETU staff, both in Sierra Leone and Liberia, to help contain the virus.

I would also like to underscore how vital the availability and proper use of PPEs has been—and continues to be— during the Ebola response. It is important to note that acquiring appropriate personal protective equipment has been a significant challenge given the the limited number of available qualified suppliers and the large volume of PPEs required to staff treatment centers at effective levels . . The current demand far exceeds the supply. We need to talk about the need for more accurate data, the need to review our plans constantly, be flexible, nimble and adaptable

Mr. Chairman, I conclude my testimony with ten recommendations for the Committee's consideration.

1. Ensure the availability of adequate, well-trained, well-protected health workers. One of the most critical lessons learned from this response has been the importance of having the human resources ready and prepared to address an outbreak of infectious disease. Cadres of health workers and community members need to be well-trained (and supported) to staff the treatment units and care centers in the affected countries and carry out other components of the response such as safe burials, contact tracing and social mobilization. This is critical not only for the immediate response but also to prepare other countries in the region for any potential future outbreaks and ensure that they have skilled personnel in place to be able to respond on their own. To be truly effective, it is important that the training of personnel be led by organizations with hands-on experience in treatment and management of Ebola cases and that it involve actual practical training with personal protective equipment and mock patients and not be limited to classroom study and power point presentations.
2. Ensure that the construction of new ETUs fits the needs of each country. The work must be well coordinated and well-trained staff ready to work in each facility. Flexible and reactive staffing models are necessary to respond to outbreaks in rural areas. Patient transport outside of Monrovia must be improved, including deployment of more ambulances, training of teams, and establishment of strong dispatch and coordination systems.
3. Ensure that the necessary quantity and quality of Personal Protective Equipment (PPE) is available.
4. Improve data collection, surveillance and referral systems that will help individuals receive treatment quickly and strengthen the link between community-based and referral-systems.
5. Establish clear and understandable linkages among coordinating bodies that are now in place, including the UN Mission for Ebola Emergency Response and country coordination bodies. Ensure that all operational groups are connected to these

coordination mechanisms. A smart and efficient coordination mechanism at the national level is critical for effectiveness of the response.

6. While we welcome the advances made over the past few weeks in establishing procedures to evacuate and treat expatriate health workers who might contract Ebola, we recommend that the systems being put in place now be institutionalized and made part of the global preparedness planning in the event of future epidemics. ETU-caliber staff should be employed at primary health facilities and a capable ambulance network should be created to move people to ETUs as quickly possible if they meet the case definition.
7. Maintain open commercial airspace over Ebola-affected countries so that personnel and resources can be moved quickly.
8. Accelerate and support the production of vaccines.
9. Invest in health preparedness in the West Africa region to ensure these countries have the needed resources, proper training and systems in place to respond themselves to possible future outbreaks of infectious diseases.
10. Revive health care services that have been affected so dramatically by the outbreak. Some of the most serious side effects of the Ebola outbreak occurred when basic health care delivery systems failed nationally. As a result, Sierra Leone and Liberia, which have already experienced some of the highest levels of maternal and child deaths, now face conditions where there are no available facilities for women to have C-sections or children to be immunized. There are no trauma centers to treat accident victims or facilities to continue to manage ongoing severe health problems affecting the local populations including high rates of malaria, pneumonia, and a wide range of chronic conditions. As a result, the mortality rate is expected to increase to higher levels. A vigorous effort must be made to restore access to primary and secondary health services as quickly as possible. Building stronger health care systems as part of recovery and long-term health strategy in the region is critical.

Thank you Mr. Chairman and Ranking Member Bass for the opportunity to present this testimony to the committee. I would be glad to answer any questions.