



Supply Chain Innovation Critical in Ebola Response

By Jarrod Goentzel

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Walk through the recently built UNICEF warehouse in Copenhagen, Denmark, and you will pass a room where office cubicles have been replaced with rolling tables, white boards, colorful couches, and a mix of gadgets and gizmos. This is the home of the organization's Innovation Unit.

The fact that the unit is embedded in the supply chain function underlines the emphasis that UNICEF puts on developing innovative processes and grounding new product ideas with operational realities; a culture normally associated with leading companies.

This culture is central to the fight against the Ebola outbreak in West Africa. UNICEF is developing new ways to deliver the large volumes of supplies it ships, and is providing a critical conduit to support Ebola Treatment Units (ETUs) and Community Care Centers (CCCs). By October 8, 2014, more than 900 metric tons of supplies were delivered to the region in support of partners, through a total of 73 flights, according to UNICEF.

UNICEF's culture of supply chain innovation offers much hope not only for the battle to halt the Ebola virus, but for humanitarian efforts generally.

Vital Capacity

Supply chain capacity is vital in the Ebola response. Because there is not yet a proven treatment or vaccine, we must halt the outbreak using public health measures that have worked over the past 40 years: rapid diagnosis for suspected cases; treatment, isolation, and contact tracing for confirmed cases; and safe burial for victims. The most critical aspect in implementing these measures is protection for the health workers who provide these and other vital services. Affording that protection depends on a reliable supply chain.

The primary challenge is scale with over 15,000 reported cases by November 20. Previously, the largest outbreak of Ebola was 425

cases. In addition to scale, the Ebola response creates unique supply chain bottlenecks, and requires the services of experienced logisticians such as those at UNICEF.

Leveraging a culture of innovation rooted in the operations of a warehouse, UNICEF is using process innovation—adapting standard processes and practices—to meet these challenges. This is happening across the supply chain in dealing with transportation constraints, supplier lead times, and a new product launch.

Transportation Constraints

When the Ebola outbreak surged in West Africa in late July 2014, many commercial airlines began cancelling flights. The reasons varied, from government requirements to the difficulties in making provisions for ground services for airlines' equipment and staff. By August 25 there were only two commercial airlines serving Liberia: Royal Air Maroc (with three flights per week) and Delta (which halted service August 31). Fortunately, Brussels Airlines was able to resume flights in early September, and faced a backlog of freight that forwarders were trying to book.

The outbreak placed unique constraints on passenger travel, and on the cargo capacity that went along with it. Although the Ebola emergency is very different than a natural disaster like an earthquake or hurricane, this transportation bottleneck changed the supply chain in a similar way as infrastructure damage at an airport, and severely limited throughput capacity. Instead of repairing infrastructure, the focus in this emergency was to replace commercial air services.

UNICEF identified providers that could work within the restrictions and ground constraints to offer cargo charters into the country. They worked with the Liberia Ministry of Health and Social Welfare (MOHSW) to quantify and prioritize supplies and with various donors to provide funding

for the flights. They staged the items at the Copenhagen warehouse in order to fully utilize the dedicated charter capacity. They booked flights on a regular schedule to provide a continual flow of critical supplies, enabling the organization to adjust to MOHSW needs. In setting up this air bridge, and combined with operations in other countries, UNICEF marked a record for monthly shipments.

Supplier Lead Times

When the Ebola outbreak reached the U.S. in September via a traveler from Liberia, news coverage amplified the fear and accelerated the preparedness efforts for a number of organizations. Throughout October, demand for personal protective equipment (PPE) for health workers spiked. Stock prices surged for specialized manufacturers such as Lakeland Industries.

A surge in key supplies during an outbreak is not expected. In fact, UNICEF identified supplier lead times as a potential issue about one month earlier. As they were ramping up their supply chain in August, UNICEF was in close communication with manufacturers. By early September, the organization reported on the issue of manufacturing capacity for PPE and began more formal coordination with key suppliers.

UNICEF has been developing a process of close industry interaction for critical supplies over the past several years. In anticipation of the need to rapidly scale up supply for an emergency, they provide long-range forecasts, consult with suppliers, and establish Long Term Arrangements (LTAs). The LTA defines terms and conditions (product, price, etc.) over a period of time for a projected total volume. It is not binding but provides a fast-start foundation for contractual obligations that commence with a purchase order. This long-term commercial partnership is established with a non-exclusive set of suppliers as a result of a competitive bidding process, usually launched with a pre-bid event involving several suppliers.

UNICEF has cultivated this process over several years for products for situations where demand can suddenly spike for humanitarian purposes and there is limited global manufacturing capacity. Examples include Ready-to-Use Therapeutic Food (RUTF) that provides essential nutrition during a famine and Long-Lasting Insecticidal Nets (LLINs), which are critical in preventing malaria. UNICEF adapted its supplier collaboration process for the PPE in the Ebola response, conducting an industry consultation on November 11-12.

Supplier management is not necessarily innovative for many commercial supply chain leaders. But the ability to cultivate close supplier relationships and negotiate terms prior to, or in this case in the midst of, surging demand from a humanitarian crisis takes this practice in a new direction.

New Product Launch

In addition to scaling up its supply chain, UNICEF also conducted a new product launch. This new product was not targeted at the health facilities, but at households providing care while these facilities were constrained.

For example, during the peak of the crisis, Liberia did not have enough beds in ETUs to treat all patients with a confirmed Ebola diagnosis. With limited capacity, family members who were left to provide care for loved ones faced extreme risk.

Working in collaboration with the MOHSW and with funding from USAID and the Paul G. Allen Family Foundation, UNICEF created “household protection kits” for these caregivers. Each kit contained protective gowns, gloves and masks, soap, chlorine and a sprayer, and instruc-

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tions on the use and safe disposal of materials.

While none of these items was innovative, the kit was new. Fortunately, when designing its global humanitarian warehouse with state-of-the-art automation, UNICEF also created a very flexible space for workers to assemble kits. This postponed production space is particularly critical for unique emergency kits that can only be assembled in reaction to needs identified in a dynamic crisis. UNICEF also had a flexible workforce ready to respond to the surge in labor requirements. On September 20, the organization issued a call to the Copenhagen community for a “massive scale-up of UNICEF kit packing.” The 9,000 kits assembled on Saturday arrived via airlift the following Wednesday.

More Innovation Needed

These examples from UNICEF are illustrative. Much of the innovative work on the ground in West Africa will only become apparent after the crisis has ebbed and the people driving the efforts have time to document them.

When faced with a daunting challenge, people often look for a silver bullet in the form of a new technology. In fighting Ebola, this may prove to be the case, and we encourage innovation through efforts like the USAID Fighting Ebola grand challenge. To date, however, the progress of slowing the exponential growth in Ebola cases has ridden on the back of the innovative supply chains being implemented by organizations like UNICEF. We must maintain this focus and support ministries of health in West Africa to strengthen their supply chains.