GT Student Project : Integrated Medical Supply Chain & Logistics Model

Port-Au-Prince, Haiti

Client : MedSurplus Alliance (MSA)

Project Background

"Sometimes, the medicine is there but no syringes. We can provide some of those missing pieces."

- Lori Warrens, MSA Director

MSA is a cross-sector alliance of medical surplus donors, medical surplus recovery organizations (MSROs), and product recipients that works collaboratively to improve access to quality donated medical products in the under-served nations of the world. Now as a program under The Taskforce for Global Health, MSA is motivated to build durable systems that protect and promote health in the context of medical equipment & consumables donation and availability, particularly in Haiti.

Haiti has been ravaged by earthquakes, hurricanes and disease outbreaks (recently Cholera) time and again. It has hence been a long-standing beneficiary of medical supplies and equipment donations flowing in from USA. Against that backdrop, MSA wants to benefit more and more patients in need in Haiti, by ensuring that the hospitals and clinics receive exactly those medical equipment and supplies donations that they need, in quantities that they can manage and when they need it.

Project Scope and Deliverables

Based on the detailed discussions with MSA and some MSROs, it was determined that the main goal of the project is to further tilt the medical equipment and supplies donation paradigm towards being recipient focused in terms of quality. To enable this, the Georgia Tech Team distilled the key result areas based on the evaluation of the current systems, & developed an Integrated Supply Chain and Logistics Framework. This framework is centered around a Medical Supply Warehouse & Distribution Center in Port Au Prince, Haiti. Below are the main deliverables and some of their key features :

A) Supply Chain & Logistics Framework

1) Framework includes multiple channels (inbound channels of the consolidated medical supply DC) for sending items to Haiti such that MSA can expand their recipient pool, and provide the recipients exactly that they need, in a timely manner. The channels rely on the **power of consolidation**, that not only provides economies of scale but also enables MSA to harness the diverse expertise of the MSROs to offer a better product mix to the beneficiaries.

2) Recommendations addressing a set of **new service offerings** such as a mission store, biomedical equipment testing lab and prepositioning of the disaster relief supplies in Haiti DC were also included to enable MSA to fulfill some unmet yet crucial needs of the hospitals and clinics in Haiti.

3) The team identified the "**key partners**" in the logistics and technology (IT) space that MSA can collaborate with to implement the proposed supply chain framework.

i) **Freight forwarders / 3PLs** that have operations in USA and Haiti were identified after exhaustive market study. The team also elaborated on the considerations for integrating freight forwarder's services into the proposed supply chain framework with respect to the type of contracts & IT integration.

ii) Recommended **WMS, ERP systems** and other collaborations tools that suit MSAs needs best. Also included recommendations regarding how MSA can procure/acquire these IT solutions as a non-profit with budget limitations.

B) High Level Warehouse / DC Design

i) The team developed a **3-D model** of the proposed warehouse using Sketch Up.

ii) Created a **Warehouse Space Estimation Tool** that has parameterized input capability. This excel based tool was tailored for use by MSROs and MSAs given the unique context of their operations. It enables them to compare various demand scenarios to estimate the space required for each section of the warehouse / DC.