WHITE PAPER
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Field Hospital Haiti
A Model for Crisis Care

Israeli Defence Forces Medical Corp

Field Hospital treats over 100 patients per day.

During ten days of full operation, the field hospital treated a total of 1,111 patients. Israeli Defence Forces (IDF) personnel carried out 242 operations, delivered 16 babies and brought hope to the people of Haiti.

Introduction

Israeli Defence Forces Medical Corp demonstrate a model for crisis care in Haiti.

On January 12th, 2010 a 7.0 magnitude earthquake hit Haiti, just 10 miles west of Port-au-Prince and its two million inhabitants. Many countries responded with pledges of funds, personnel and humanitarian aid in the following days, but it was the Israeli Defence Forces (IDF) Medical Corps who demonstrated a model for crisis management by deploying a fully functional field hospital within forty-eight hours of the earthquake.

By combining medical equipment, mobile technology and Electronic Records Management (EMR) the IDF succeeded in:

- Responding early to the critical medical needs of earthquake victims
- Establishing efficient medical pathways to ensure the best use of limited resources
- Ensuring that essential patient information was available where it was needed and that it could be shared with experts wherever they were located.

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IDF Field Hospital Enables Early Medical Interventions

Responding to the Crisis

On January 14th, two planes, one filled with 230 personnel from the IDF Home Front Command and from the IDF Medical Corps and the other with essential medical supplies landed in Port-au-Prince. Arriving into a situation of chaos, with no functioning authority to coordinate the distribution of medical resources, the IDF pitched up on the site of a football field and immediately began establishing a field hospital needed to deliver world class field medicine to assist the injured and to save lives.

The Field Hospital in Port-au-Prince

The field hospital, capable of handling five hundred cases per day was fully deployed within just eight hours and had started treating patients even before it was fully operational. The field hospital was divided into five main sections, Obstetrics and Gynaecology, Orthopaedics, Surgery, Internal Medicine and Paediatrics. It contains sixty inpatient beds, four of which are in the Intensive Care Unit (ICU).

The hospital was fully equipped with all of the equipment, medications and technology needed to provide life-saving operations, including x-ray equipment, ventilators, a pharmacy and an operating room, which had two operating tables.

From the outset, the hospital operated at a full capacity of seventy-two patients. The operating room, intensive care unit and neo-natal intensive care units were constantly full. As one patient was discharged, another was admitted. Some of the most common injuries were fractures and many patients had severe infections as a result of the earthquake. As soon as possible, patients were discharged with a full course of antibiotics, a discharge letter and a follow-up appointment.

The field hospital incorporated an ethics team to help make the difficult medical decisions about whom to provide care to in the face of overwhelming demand and limited resources. The field personnel were supported by a psychiatrist to help them deal with the stress that they were under.

Information, Mobility and Wireless Technology

Information Systems

The field hospital has been used before in locations such as Kosovo, Turkey and India but never before had to deal with medical need on such a scale. These experiences had led the IDF to believe that a specialized Information Response System should form part of the field hospital unit. This system was first deployed two months before the earthquake during a drill but proved to be a critical component of the medical mission in Haiti.

Administration and Patient Management

When the IDF arrived in Haiti, there was no functioning authority coordinating the distribution of the available medical resources. Patients were presenting themselves at the entrance to the field hospital or arriving in mini-vans. Each patient at the hospital entrance was given an ID number and a barcode. Each time the patient was moved, the barcode was scanned so that their location could be tracked around the system.

Coordinators used the Information Systems dashboard to understand where resources were and where they were needed. Administration information was also captured on an ongoing basis, so that data related to surgeries completed, births in progress, diagnosis completed and so forth was readily available.

As each new patient was triaged, an Electronic Medical Record (EMR) was established for them. In addition to the patient care benefits of the EMR, another valuable benefit emerged during the crisis. When members of the local population came to the field hospital to try and find injured relatives, the EMR was used to quickly determine whether they had

received or were currently receiving treatment within the field hospital.

Electronic Medical Records

The Information System and the EMR was specifically designed for the field hospital. The EMR included demographic information, identification and clinical photos, patient condition, medication, surgeries, lab results, imaging results, patient movements within the hospital and the discharge summary.

This enabled medics, doctors and nurses to have a single view of the patient, to share and to update information in real-time.

In a crisis situation, time is of the essence. In Haiti, having doctors share records electronically, enabled them to quickly ascertain the condition of the patient, the impact that the treatment being administered was having and to make any alteration to care delivery deemed appropriate.

Picture archiving and communication system (PACS)

The field hospital included a portable digital x-ray machine, containing an Intel® Pentium® dual-core processor. This enabled x-rays to be taken wherever they were needed and freed up radiology technicians from having to develop film. X-rays were digitally captured and wirelessly transferred to wherever they were needed even to the remote locations of specialist consultants who provided expert guidance to the field hospital staff. During the field hospital mission, over 550 images were taken and viewed on laptops and Panasonic Mobile Clinical Assistants (MCAs).

Mobile Clinical Assistant (MCA)

Within the field hospital, medics were always on the move from one patient to another, frequently in different wards or locations. The IDF team had brought with them a Mobile Clinical Assistant (MCA) that proved invaluable in helping to keep doctors in touch with their colleagues prioritising patients and ensuring that the patient EMR was always to hand.

The MCA was primarily used at triage, when patients presented at the hospital for treatment. The MCA was used to photograph the patient and any specific injuries that they had and initiate an EMR. One of the big difficulties was the language but using the MCA and the EMR helped greatly.

The MCA enabled paramedics and medics to access patient Electronic Medical Records at the point-of-care and document a patient's condition in real time. This helped to reduce transcription errors, streamline workflow and deliver faster, safer care.

Wireless Network.

A wireless network was set up almost immediately to facilitate the flow of information throughout the hospital. Video conference systems were set up in the operating theatres to enable field surgeons to consult with experts back in Israeli hospitals. Paramedics and medics with the MCA were able to wirelessly connect to central databases to receive updated lab reports, consult with experts and stay in touch with overall command operations.

Closing

With time, more and more groups started to operate. On the 26th of January, as the USNS Comfort arrived in Haiti, the IDF hospital in Haiti finished its assignment. Some groups opened referral centres which enabled the field hospital to revise discharge policies. The Electronic Medical Records proved very useful as a means of referring patients in a structured and organized manner.

The delegation left thirty tons of medical equipment for use in the ongoing aid effort to be distributed to different locations in Haiti.

The actions of the IDF were a symbol of hope to the people of Haiti in their hour of need. The field hospital demonstrated that when motivated personnel and technology come together, it is possible to deliver quality medical care even in the harsh aftermath of a disaster such as befell Haiti.

KEY STATISTICS

% of Females:	56%
Males:	44%
Children up to age 18:	37%
Hospitalized patients:	737
Ambulatory care patients:	374
Patients operated on:	203
Operations:	242
Pregnant patients:	24
Deliveries:	16

For more information about the mobile clinical assistant, please visit
www.intel.cm/healthcare/ps/mca