Canadian Armed Forces
Humanitarian Response
Major Stephanie Smith, 1 Canadian Field Hospital
No potential conflicts of interest
Overview

• Disaster Assistance Response Team
  – Background
  – Missions
  – Lessons learned

• Acute Medical Surgical Capability
  – Advance Component
  – Light Component

• Training
DART Background

• Created in 1996, after the Canadian Armed Forces (CAF) deployment to Rwanda in 1994
• In 1999, a high-readiness depot was established
DART Responsibilities

• Stabilize the primary effects of the disaster in co-operation with national and regional governments and NGOs

• Prevent rapid onset of the secondary effects of the disaster

• Bridge the gap
DART Critical Functions

• Conduct water purification to provide safe drinking water
• Provide primary medical care
• Provide engineering assistance
• Repair basic infrastructure
• Improve communication
DART Composition

- Company Headquarters (10 pers)
- Medical Platoon (45 pers)-Rotate every 2 yrs
  - 4 x Medical Officer
  - 4 x Nursing Officer
  - 3 Health Care Administrators
  - 1 x Pharmacist
  - 1 x Laboratory Technician
  - 32 Medical Technicians
- Logistics Platoon (20 pers)
- Engineer Troop (40 pers)
- Defence and Security Platoon (45 pers)
- Aviation (20-40 pers)- optional
Aviation
Engineers
DART Missions

- Honduras 1998 (Op CENTRAL): Hurricane Mitch
- Turkey 1999 (Op TORRENT): 7.6 Earthquake
- Sri Lanka 2004/05 (Op STRUCTURE): Indian Ocean Tsunami
- Pakistan 2005 (Op PLATEAU): 7.6 Earthquake
- Haiti 2010 (Op HESTIA): 7.0 Earthquake
- Philippines 2013 (Op RENAISSANCE): Typhoon Haiyan
OP CENTRAL-1998
Honduras Hurricane Mitch

• Situation:
  – More than 11,000 people dead
  – Destroyed hundreds of thousands of homes and causing more than $5 billion in damages
  – Deadliest hurricane to hit the Western Hemisphere in more than 200 years

• Operations:
  – Treated 7,500 patients
  – Produced thousands of litres of clean drinking water
  – Chlorinated local wells used by about 15,000 people
  – Repaired roads, bridges and electrical and water supply systems
  – Delivered more than 113 tonnes of food, water and medical supplies
OP TORRENT-1999
Turkey Earthquake (7.4)

• Situation:
  – thousands of buildings collapsed
  – 15,576 people killed

• Operations:
  – Treated more than 5,000 patients
  – Produced more than 2.5 million litres of purified water, tested 50 water sources for safety and monitored a water treatment plant and reservoirs
  – Re-established school function
  – Restored electricity at a medical clinic
  – Constructed a 2,500-person tented camp
OP STRUCTURE - 2005

Sri Lanka

Epicentre

Tsunami Wave Path
Sri Lanka Tsunami

• **Situation:**
  – 40-foot waves striking nearly 1km inland
  – 40,000 deaths
  – Thousands missing
  – 900,000 homeless

• **Operations:**
  – Treated 7500 patients
  – Produced 3.6 million litres of water
  – Ferried 70,000 passengers across Aragum Bay
  – Delivered mental health information on critical incident stress
  – Engineering & Community based projects
  – Rubble removal
  – School repairs
  – Water main repairs
  – Fishing boat repairs
OP PLATEAU - 2005
Pakistan Earthquake (7.6)

**Situation:**
- 147 aftershocks occurred within one day of the initial quake
- killed tens of thousands
- 2.5 million homeless

**Operations:**
- Distributed 500 tonnes of humanitarian aid supplies
- Purified and distributed 3.8 million litres of drinking water
- The team also provided medical treatment to 11,782 people, including:
  - 7,000 who received care from mobile medical teams airlifted by helicopter to their isolated communities.
  - 2,637 who received care at the DART clinic
  - 2,145 who were immunized against a variety of contagious diseases
OP HESTIA-2010

A magnitude 7.0 earthquake struck near Port-Au-Prince at 4:53 p.m. last night.
Haiti Earthquake (7.0)

• Situation:
  − Major infrastructure destroyed
  − Water, hydro and phone services collapsed
  − Roads blocked
  − Health care facilities destroyed or flooded with injured
  − Presidential Palace destroyed
  − More than 220,000 killed
  − More than 300,000 injured
  − 1.5 million homeless

• Operations:
  − 10000 patients treated
  − Over 500,000L of water purified
  − Cash for Work Projects
  − Latrines for IDP camps
  − WFP security
  − Shelters for orphanages
  − Repair to water distribution system
  − Rubble removal
Haiti Earthquake

Léogâne
Dest: 80-90%
Pop: 134k

Gressier
Dest: 40-50%
Pop: 25k

Carrefour
Dest: 40-50%
Pop: 334k

Petit Goave
Dest: 15%
Pop: 254k

Jacmel
Dest: 50-60%
Pop: 34k

Port-au-Prince
Pop: 2M
Displaced pers: 469k

Epicentre
Mag: 7.0
16:53 12/01/10
Philippines Typhoon Haiyan

Situation:
-- 6,000 dead
-- 11,500 million displaced

Operations:
– 6600 patients treated
– 519,000 litres of potable water
– 290,000 lbs of food delivered
– 10,325 lbs of building materials delivered
– 2,688 x Non-Food Items (Water/Wash/Hygiene kits) delivered
– 27 water purification systems delivered
– 131 kms of routes cleared from debris
– 8 hospital generators repaired
– 2,500 person evacuation camp built
“This is the most effective civil-military coordination we have ever seen at the field level and should be used as a model for future disaster response operations” - Baroness Valerie Amos
UN Under Secretary General for Humanitarian Affairs
Filipino Canadians
Armed Forces of the Philippines
DART DEPLOYMENTS

1994/1996
RWANDA
Cholera/injuries from conflict
DART was created

1998
TURKEY
Earthquake
~50% peds (DART mbr)

1999
PAKISTAN
Earthquake
-44% peds (Sami et al., 2009)

2005
PHILIPPINES
Typhoon
- 48% peds (Savage & Smith, 2014)

2010
HAITI
Earthquake
- 30-50% peds (Ginzburg et al., 2010)

2013

HONDURAS
Hurricane
~50% peds (DART mbr)

SRI LANKA
Tsunami
-26% peds (K wah et al., 2006)

26-50% pediatric casualties
DART Lessons Learned

- Specific clinical experience required (OBGYN, pediatrics and mental health)
- Ethical dilemmas/death and dying
- Cultural and language barriers are improved by incorporating CAF members from host nation
- Equipment modernization and review
- Data tracking standardization
- Annual training exercises
Acute Surgical Medical Capability (AMSC)
Acute Medical Surgical Capability

- Created in 2010, following the DART and 1 Canadian Field Hospital response to the Haiti
- Rapidly deployable surgical capability
AMSC Composition

• Company Headquarters (11 pers)
  – 5 x Health Care Administrators
  – 1 x Physician Assistant
  – 3 x Signals
  – 2 x Clerks

• Medical Platoon (28 pers)
  – 6 x OR team (GenSurg, Ortho, Anesthesia, OR nurse, OR tech)
  – 3 x Medical Officer/Physician Assistant
  – 8 x Nursing Officer
  – 8 x Medical Technicians
  – 1 x Preventive Medicine

• Logistics Platoon (6 pers)
AMSC Advance Footprint

**Capabilities/Beds Within the AMSC Advance**
- OR – 1
- Resus – 2
- CCW/PACU – 2
- ICW – 6
AMSC Advance

- Deploy within 48 hrs
- Self sustain for 72 hrs
- 45 personnel (HQ, medical and logistics pers)
- Limited diagnostic capability
- 1 Operating Room (no sterilization capability)
- 2 Critical Care beds
- 6 Intermediate Care beds
AMSC Light Footprint

- OR 2
- Scrub
- PACU/Resus
- A&D
- CSR
- X-Ray
- CP
- HQ
- Lab/PMed
- Pharm/BMET
- Pharm Stores
- External Triage

Capabilities/Beds Within the AMSC Light
- OR - 2
- Resus/PACU - 2
- CCW - 2
- ICW - 16
- Isolation – 3 (if required)
AMSC Light

- Deploy within 3 days of the Advance component
- Provide care for 40-60 days (supported by National Support Element)
- Xray and laboratory capability
- 2 Operating Rooms (Sterilization capability)
- 2 Critical Care beds
- 16 Intermediate Care beds
Training

• Annual training exercise
  • Specialists
  • Detachment Personnel
  • Reserve Personnel
• Maintenance of Clinical Readiness Program
  • 5/20 days in Pediatric ICU/ER
  • 5 days in OBGYN
  • Pediatric Advanced Life Support
  • Advanced Medical Training Resuscitation Program
Questions?