Surge capacity in healthcare during emergencies

How could the world do better?
Background

- Lessons from recent disasters and outbreaks:

- FMT Response Issues
  - Varying Capacities
  - Lack of coordination
  - Lack of national capacity to receive and manage FMTs

- Gaps
  - International standards – *Foreign Field Hospitals and Sphere minimum standards* insufficient
  - Registration and/or authorisation on arrival
  - Monitoring, reporting, quality assurance
Burden of disease in disaster

1. Direct SID caused trauma
2. Trauma complications
3. Indirect caused Infectious diseases
4. Accumulated elective care needs

Hospital resources (need/use)

Non trauma Emergency
Trauma
Elective

SID event

Days after SID

vonSchreeb © 2008 Prehospital and Disaster Medicine
### Expected effects of Natural disaster


<table>
<thead>
<tr>
<th>Effect</th>
<th>Earthquakes</th>
<th>Strong Winds</th>
<th>Tsunamis and Flash floods</th>
<th>Ordinary Floods</th>
<th>Landslides</th>
<th>Volcanic and Lava Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of lives</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Severe injuries requiring complex treatment</td>
<td><strong>High</strong></td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Major risk of communicable diseases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Potential risk following all significant phenomena</td>
</tr>
<tr>
<td>Damage to health facilities</td>
<td>Severe (structure and equipment)</td>
<td>Severe</td>
<td>Severe but localized (equipment only)</td>
<td>Severe but localized</td>
<td>Severe (structure and equipment)</td>
<td></td>
</tr>
<tr>
<td>Damage to water supply systems</td>
<td>Severe</td>
<td>Light</td>
<td>Severe</td>
<td>Light</td>
<td>Severe but localized</td>
<td>Severe</td>
</tr>
<tr>
<td>Food scarcity</td>
<td>Infrequent (generally caused by economic or logistical factors)</td>
<td>Common</td>
<td>Common</td>
<td>Infrequent</td>
<td>Infrequent</td>
<td></td>
</tr>
<tr>
<td>Large migrations</td>
<td>Infrequent (common in severely affected urban areas)</td>
<td>Common</td>
<td>Common</td>
<td></td>
<td>Common (Generally limited)</td>
<td></td>
</tr>
</tbody>
</table>
Relationship between killed and injured in three recent earthquakes:

- Bam, 2003: 29% injured, 19% killed
- Pakistan, 2004: 55% injured, 0% killed
- China, 2008: 0% injured, 100% killed

Relationship between killed and injured in two recent tsunamis:

- Indonesia, 2004: 100% killed, 0% injured
- Japan, 2011: 88% killed, 12% injured
FMT Definition

“Refers to groups of health professionals and supporting staff outside their country of origin, aiming to provide health care specifically to disaster affected populations. They include governmental (both civilian and military) and non-governmental teams.”

Note:

- The definition seeks to apply to everyone from the very small groups of medical personnel arriving with a back pack after watching CNN to the large professional teams from IFRC, NGOs and some Governments.

- It can apply to teams with or without Field Hospitals, an important change from previous PAHO guidelines. It describes the services and people more than the facilities that they may or may not bring.
### Classification of and standards for Foreign Medical Teams

<table>
<thead>
<tr>
<th>FMT Type</th>
<th>Definition</th>
<th>Services</th>
<th>Key Characteristics</th>
<th>Minimal Benchmark Indicators</th>
<th>Opening Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Outpatient Emergency Care</strong></td>
<td>Outpatient initial emergency care of injuries and other significant health care needs</td>
<td>• Triage, assessment, first aid • Stabilisation + referral of severe trauma and non-trauma emergencies</td>
<td>• Light, portable and adaptable • Care adapted to context and scale</td>
<td>100 patients/day</td>
<td>Day time services</td>
</tr>
<tr>
<td><strong>2. Inpatient Surgical Emergency Care</strong></td>
<td>Inpatient acute care, general and obstetric surgery for trauma and other conditions</td>
<td>• Surgical triage, assessment and advanced life support • Definitive wound and basic fracture management</td>
<td>• Use existing or deployable facility structures • Clean operating theatre</td>
<td>1 operating theatre with 1 operating room: operations/day</td>
<td>Day and night services</td>
</tr>
<tr>
<td><strong>3. Inpatient Referral Care</strong></td>
<td>Complex inpatient referral surgical care including intensive care capacity</td>
<td>• Capacity to provide type 2 services • Complex reconstructive wound and orthopaedic care</td>
<td>• Use existing or deployable facility structures • Sterile operating theatre</td>
<td>1 operating theatre with at least 2 operating rooms</td>
<td>Day and night services</td>
</tr>
<tr>
<td><strong>Additional Specialised Care FMT</strong></td>
<td>Additional specialised care cells \ 2, 3 o</td>
<td>• Intensive care beds with 24h monitoring and ability to ventilate • Acceptance and referral services</td>
<td>• Care appropriate to support referrals from FMT1+2 and national health system</td>
<td>Minor operations per day • 4-6 intensive care beds</td>
<td>Depending on capacity On request</td>
</tr>
</tbody>
</table>

#### Type 1- Outpatient Emergency Care and Referral

- **Definition:** Outpatient initial emergency care of injuries and other significant health care needs.
- **Services:**
  - Triage, assessment, first aid
  - Stabilisation + referral of severe trauma and non-trauma emergencies
- **Key Characteristics:**
  - Light, portable and adaptable
  - Care adapted to context and scale
- **Minimal Benchmark Indicators:** 100 patients/day
- **Opening Hours:** Day time services

#### Type 2- Inpatient Surgical Emergency Care

- **Definition:** Inpatient acute care, general and obstetric surgery for trauma and other conditions.
- **Services:**
  - Surgical triage, assessment and advanced life support
  - Definitive wound and basic fracture management
- **Key Characteristics:**
  - Use existing or deployable facility structures
  - Clean operating theatre
- **Minimal Benchmark Indicators:** 1 operating theatre with 1 operating room: operations/day
- **Opening Hours:** Day and night services

#### Type 3- Inpatient Referral Care

- **Definition:** Complex inpatient referral surgical care including intensive care capacity.
- **Services:**
  - Capacity to provide type 2 services
  - Complex reconstructive wound and orthopaedic care
- **Key Characteristics:**
  - Use existing or deployable facility structures
  - Sterile operating theatre
- **Minimal Benchmark Indicators:** 1 operating theatre with at least 2 operating rooms
- **Opening Hours:** Day and night services

#### Additional Specialist Care FMT (e.g. Cholera, Ebola, Rehabilitation etc)

- **Definition:** Additional specialised care cells for type 2+3 FMT services or local hospital.
- **Services:**
  - Context specific specialist care supplementary to type 2+3 FMT services or local hospital
  - Responds to an expressed need for specialised services
- **Minimal Benchmark Indicators:** Depending on capacity
- **Opening Hours:** On request
FMT Core Standards

Agree to register with the relevant national authority or lead international agency on arrival and collaborate with inter-agency response coordination mechanisms at global, national and sub-national levels, as well as with other FMTs and health systems.

- Will undertake to report on arrival what type, capacity and services they can offer based on the international FMT classification system.

- Will undertake to report at regular intervals during response, and prior to departure, to the national authorities and the cluster, using national reporting formats, or if not available, the agreed international reporting format.

- Will undertake to keep confidential records of interventions, clinical monitoring and possible complications.

- Will undertake for the individual patient, to have record of treatment performed and referral for follow-up planned as needed.

- Will undertake to be part of the wider health referral system, and depending on type, offer to accept or refer or both accept and refer patients to other FMTs, the national health system or, if approved, other countries.

- FMTs will adhere to professional guidelines: all their staff must be registered to practice in home country and have licence for the work they are assigned to by the agency.

- FMTs will ensure that all their staff are specialists in their field appropriately trained in either war or sudden onset disaster surgical injury management. The majority should be experienced in global health, disaster medicine and providing care in austere environments. Acknowledging the need to train and provide experience to new staff, there may be scope for junior and inexperienced staff in the later phase of a disaster response and working under direct supervision of experienced colleagues.


- FMTs are self sufficient and not put demand on logistic support from the affected country, unless agreed otherwise before deployment.

FMTs must ensure their team and individual are covered by adequate malpractice insurance, and have a mechanism to deal with complaints and allegations of malpractice.

FMTs must have arrangements in place for the care of their team members health and safety.
Referral pathways

Type 3

Type 2

Type 1

Specialty teams requiring support within an FMT level 2 or 3 care facility or local secondary or tertiary hospital
National and Regional responses

- Enhance national capacity for surveillance and response
- National capacity to accept, register and coordinate teams
- FMTs part of the national surge planning
- Regional mechanisms for deployment
- Teams that are predictable, timely and self-sufficient
- No individuals or small groups without equipment, medications or means of self-caring
Super Typhoon Haiyan (Yolanda)
Surgical Standards (and partnerships)
Burden of NCDs in disaster
Team selection, Team care, Team morale
Disaster Conclusions

- Quality assurance and safe predictable clinical response for the affected population
- Minimum standards are universal
- Logistics and field operations are key
New trends for FMTs

- Use in other forms of Health Emergency
  - Outbreak and Public Health
  - Complex and Conflict
  - Protracted emergencies
### Summary Epidemiology – West Africa

#### Cumulative cases

<table>
<thead>
<tr>
<th>Country</th>
<th>Confirmed</th>
<th>Probable</th>
<th>Suspected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinea</td>
<td>2979</td>
<td>395</td>
<td>3373</td>
</tr>
<tr>
<td>Liberia</td>
<td>3150</td>
<td>1879</td>
<td>4526</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>8502</td>
<td>287</td>
<td>2990</td>
</tr>
</tbody>
</table>

**Latest Sitrep**
- 17 March

**Total** = 24,743

#### Cumulative deaths

<table>
<thead>
<tr>
<th>Country</th>
<th>Death Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinea</td>
<td>2231</td>
</tr>
<tr>
<td>Liberia</td>
<td>4283</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>3702</td>
</tr>
</tbody>
</table>

**Latest Sitrep**
- 17 March

**Total** = 10,216
Initially MSF alone

FMT call-out begins mid July

IFRC, Emergencia, IMC join Aug ’14

WHO build 600-1000 beds

US build announced mid-Sept (Liberia)

UK build announced late-Sept (SL)

MoH led centres in each country

66 ETCs

40 organizations

58 FMTs
Conclusions from Ebola

- Isolation and Treatment capacity bent the curve
- Not enough organizations ready to deploy willing volunteers, not many are “All-Hazard”
- Logistics and field operations the key (again)
- WHO reform needed to provide key coordination and standard setting functions and to become operational as provider of last resort
Questions

1. What does a Global Health Emergency Workforce mean?
2. How do we take a high income paradigm and increase “south-south responses?"
   - High level of interest and confusion: Global Health security, G7, G20, Volunteer databases, at least 15 parallel processes
3. Have we enough organizations and Governments willing to deploy teams?
4. How does help come?
   - Tasking vs invitation/request vs offer of assistance
Next steps

- Registration of FMTs
- Assess global capacity to respond, with regional coverage
- Enhanced Knowledge of Classification, Capability and Coordination Mechanisms
  - Ministry of Health and NDMO- strengthen ability to manage
  - WHO, UN-OCHA, regional bodies
  - FMT’s themselves, and the global health community
- Enhancement of national team response
- Use of FMTs to support the health system during surge and early recovery, leaving a legacy
Thank you

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