DISASTER AID
ISSUES FOR POLICY ADVICE THROUGH EVIDENCE-BASED RESEARCH AND PRACTICE

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STRATEGIC AIM 1
SAVE LIVES, PROTECT LIVELIHOODS, AND STRENGTHEN RECOVERY FROM DISASTERS AND CRISES

STRATEGIC AIM 2
ENABLE HEALTHY AND SAFE LIVING

STRATEGIC AIM 3
PROMOTE SOCIAL INCLUSION AND A CULTURE OF NON-VIOLENCE AND PEACE
Disaster aid

This presentation will discuss experiences and issues for policy advice through evidence-based research and practice, while keeping in view the IFRC’s Strategy 2020

2. Gujarat earthquake (2001)
4. Leh cloudburst (2010)
5. Biological disasters
   a) Pneumonic plague outbreak (1994 & 2002)
   b) SARS (2002)
6. Summary of recommendations
Evidenced based practice

- Our reasoning when deciding how to carry out aid currently mainly comes from practice, rather than direct evidence.

- Although from strong past experiences, good practices have been developed in disaster management and relief, we cannot continue to rely on systems which are inherently ad hoc.

- With the responsibility placed upon us by the generosity of our donors, often accounting to billions of euro in total, we have a responsibility to ensure that their investments are based on sound decision making systems.
"An error does not become truth by reason of multiplied propagation, nor does truth become error because nobody sees it."

– Mahatma Gandhi
Common major issues following disasters

- Lack of power/electricity
- Disrupted communications
- Water supply problems
- Road breakages/blockages
- Pre-hospitalization care
- Need for emergency medical care
- Removal of dead bodies and carcasses
- Prevention of outbreaks
- Housing and other public infrastructure restoration
- Media management
Odisha super cyclone (1999)

29 October 1999
- First “super cyclonic storm”
- 8 metre storm surge travelled 20 km inland
- 260 km/h winds (equivalent to Cat. 5 hurricane)
- 9,803 deaths (official, however estimates have reached 15,000)
- 275,000 homes destroyed (1.5 million damaged)
- 1.67 million left homeless
- Up to 19.5 million affected to varying degrees
- Total damage: 4.5 billion US dollars
Odisha super cyclone (1999)

**Action taken:**
- Prevention and control of disease outbreak (water-, vector- borne and others)
- Strengthened surveillance
- Response to outbreaks of water-borne diseases (including disinfection of wells where capacity was available – flag system)
- Continued routine immunizations to maintain prevent vaccine preventable diseases
- Psychosocial support
- Management of dead bodies and carcasses.
Odisha super cyclone (1999)

Some of the immediate medical relief provided by the central government included:

- Bleaching powder (350 metric tonnes)
- Halogen tablets (34 million)
- ORS powder (1.6 million packets)
- Medicines (including paediatric medicines)
- Chloroquine (24.5 million tablets) as well as other anti malarial drugs including DDT (230 metric tonnes)
- Phenyl (200,000 litres)
Odisha super cyclone (1999)

Due to the scale of need, disinfection of wells needed to be carried out directly, rather than bucket-by-bucket disinfection.

**Challenge:** Evidence about the duration for which a mass-used source of water (wells) remain safe after chlorination during disaster situations, keeping in view the larger number of persons using the facility, ecological damage, and large movement of humans and livestock. This could help in using the RED/GREEN flags for that duration to educate community?
Odisha super cyclone (1999)

A large amount unsolicited relief goods arrived, and were often completely inappropriate to the environment and needs.

**Challenge:** Evidence about the usefulness or otherwise of various kinds of unsolicited donations received during disasters?

Disease surveillance was carried out due to fears of a potential disease outbreaks.

**Challenge:** Evidence about the usefulness of establishing on-site surveillance system in preventing outbreaks following disasters?
Gujarat earthquake (2001)

- 26 January 2001
- 6.9 magnitude (Richter)
- Over 19,000 deaths
- 167,000 injured
- 400,000 homes destroyed*
- 600,000 people made homeless*

- Estimated damage: 1.3 billion US dollars (official), but may have been as high as 5 billion US dollars

* Even in these numbers, there is discrepancy.
Gujarat earthquake (2001)
Gujarat earthquake (2001)

**Challenge:** What are the “optimal” relief systems/materials for a society to keep at hand in terms of emergency response systems? For example, a mobile hospital maintained by the authorities can be extremely costly, but there is a time delay in one being deployed from outside.

*Where is the balance?*
Gujarat earthquake (2001) – disaster relief camp

**SHERE standard:**
People have sufficient covered living space providing thermal comfort, fresh air and protection from the climate ensuring their privacy, safety and health, and enabling essential household and livelihood activities to be undertaken - 3.5 m² covered area per person

**Challenge:**
To generate evidence about the minimal space requirement in shelters without having any adverse health impact.
Indian Ocean tsunami (2004)

- One of largest earthquakes in recorded history
- 226,000 lives lost
- 14 countries affected
Indian Ocean tsunami (2004)

- The tsunami caused extensive damage in 897 villages in five States/UTs in India
  - Andaman & Nicobar (A&N) Islands
  - Pondicherry
  - Andhra Pradesh (AP)
  - Tamil Nadu (TN)
  - Kerala

- Injured, missing and dead
  - 4,259 people injured
  - 5,555 people missing
  - 10,749 people died

- Major sectors affected in each State:
  - Fisheries & Boats
  - Housing
  - Ports & Jetties
  - Agriculture/ Forest / Livelihood
  - Roads & Bridges
  - Water Supply & Sewerage
  - Power & ICT
  - Social Infrastructure
Indian Ocean tsunami (2004)

Action by central government:
- 350 doctors & 100 paramedical staff sent to affected areas
- 100+ metric tons of medical stock dispatched immediately

*This event was the trigger for evidence based aid from the international perspective*
## Timeline

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<td>+ 120 to 150 minutes</td>
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<td>+ 210 minutes</td>
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<tr>
<td>Somalia</td>
<td>+ 420 minutes</td>
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</tbody>
</table>
Indian Ocean tsunami (2004)

- Media was in constantly seeking new issues to report on, sometimes stretching past reality...

- Adequate quantities of bleaching powder, chlorine tablets, medicine, and other relief, as well as transport / medical facilities were provided.
Indian Ocean tsunami (2004)

Challenge:  
1. *Strengthening of the early warning systems?*
2. *Managing information, both to the public (through the media) and to potential donors, in this case, countless numbers of them?*
Leh cloud burst (2010)

- 6 August 2010
- Leh is at an altitude of 3,505 meters (10,500 ft)
- Cloud burst lead to flash floods and land slides
- Two water purification units were deployed
  - providing 20,000 litres of potable water each day for 3 months.
- 1,000 families were assisted with non-food items
Leh cloud burst (2010)

Challenges: Panic - word spread quickly about water coming down the mountainside, even when there was no truth to this.

Evidence for best strategies dissemination of correct information?

Evidence of effectiveness of psychosocial counseling by community volunteers through short trainings?
Biological disasters 1

Pneumonic plague outbreak: Plague killed an estimated 12.5 million people in India between 1898 and 1948

Occurred in Surat (Gujarat) in 1994
- 876 cases reported
- 54 deaths
- 1.7 US billion dollars in losses
- Flights cancelled

Outbreak in Hat Koti (Himachal Pradesh) in 2002
- Action: Capsule doxycycline, masks, gloves, disinfectant, etc., provided for use as required
- Result: 16 cases and 4 deaths

Challenge:
What type of masks (N-5) are really protective to stop spread of pneumonic plague and similar infections?
Aren’t four-layered, homemade masks from old cotton clothes, to be changed every 4-6 hours, equally effective?
Various facemask protection

- **Surgical mask**
  - Costly / less easily available in disasters

- **N5 mask**
  - Costly / can be difficult to acquire

- **Homemade mask**
  - Inexpensive / readily available
Biological disasters 1 contd.
Pneumonic plague outbreak

**Challenge:** Evidence about the duration of storage of dead bodies at various ambient temperatures in the absence of cold storage conditions as well as the safety of conventional modes of dead body disposal during disasters (following Plague, SARS, H1N1 etc.).
Biological disasters 2
SARS epidemic (2002)

November 2002-July 2003
- Zero case suspected to be in Guangdong Province, China.
- **Global:**
  - 8,422 cases (37 countries)
  - 916 deaths (10.9 per cent)
- **India:**
  - 3 probable cases (10 suspect)
  - All international passengers screened (120,000 weekly)

Lessons learned from experience in from Surat and Hat Koti pneumonic plague outbreak were applied

**Challenges:**
Ways and means to control the initial fire with a cup of water!
Biological disasters

Information management is key to reduce and avoid undue panic.

- Is it more effective to focus on pre-warning and informing than relying on capacity to manage public expectations for information during the crisis?

- Does the research carried out already in developed countries also apply in developing nations?
HR issues for DM

- Similar to SPHERE standards, *should there also be a similar system in place for human resources in disasters which is inclusive of all operating organizations?*

- There are already figures that can be used to base the system on:
  - No affected?
  - Type and nature of disaster
  - Local capacity

- *Are we currently being realistic in terms of our HR:impact measurements? If analysed, would we find that our models are based on actual need, or simply funds available?*
Aid is just one part of the solution
(Need for equitable global aid for DRR based on known vulnerabilities)

The investment in preparedness is of greater importance and value compared to the dispatching of relief goods.

Globally, more than 75% of earthquake energy is released in the circum-Pacific belt, about 20% in the Alpine-Himalayan belt, and remaining 5% through the mid-oceanic ridges and other Stable Continental Region earthquakes.
Benefits of evidence-based decision making

**Negative**
Guides us on what is actually effective and what is not:
- HRT in post-menopausal women
- Arthroscopy washing of knee joints
- Percutaneous vertebroplasty
- Anti arrhythmia drugs in heart attacks

**Positive**
Can highlight simple solutions:
- Ash as a disinfectant to clean hands?
- Applying honey to wounds?
- Prevention of non-communicable diseases
Summary
Issues for policy advice through evidence-based research and practice

1. Are four-layered, homemade masks from old cotton clothes, changed every 4-6 hours, equally effective vis-à-vis surgical or N-5 masks, for preventing communicable diseases such as H1N1, SARS, pneumonic plague, etc.

2. Minimal space requirement in shelters without having any adverse health impact.

3. Optimal quantum/type of equipments/relief materials for prepositioning storage.

4. For best outcomes, need for equitable global aid for disaster risk reduction, based on known vulnerabilities.

Continued…
Summary

Issues for policy advice through evidence-based research and practice

5. The need and usefulness or otherwise of the visits by VIPs to disaster affected areas.

6. Disinfection of water bodies (wells) in disaster situations.

7. Like the SPHERE standards, the need for HR standards, proportionate to requirements of the disaster relief operations (no. of staff, roles, etc.).

8. Duration of storage of dead bodies at various ambient temperatures in the absence of cold storage conditions as well as the safety of conventional modes of dead body disposal (following plague, SARS, H1N1 etc.) during disasters.
Suggested priorities

1. Are four-layered, homemade masks from old cotton clothes, changed every 4-6 hours, equally effective vis-à-vis surgical or N-5 masks, for preventing communicable diseases such as H1N1, SARS, pneumonic plague, etc.

2. Minimal space requirement in shelters without having any adverse health impact.

3. Optimal quantum/type of equipments/relief materials for prepositioning storage.

4. For best outcomes, need for equitable global aid for disaster risk reduction, based on known vulnerabilities.

5. The need and usefulness or otherwise of the visits by VIPs to disaster affected areas.
"Out of clutter, find simplicity. From discord, find harmony. In the middle of difficulty lies opportunity."

– Albert Einstein
Thank you

STRATEGIC AIM 1
Save lives, protect livelihoods, and strengthen recovery from disasters and crises

STRATEGIC AIM 2
Enable healthy and safe living

STRATEGIC AIM 3
Promote social inclusion and a culture of non-violence and peace