Impact of Natural Disasters on the Health System in Africa
Outline of Presentation

- The emergency situation in Africa
- Common emergencies in Africa
  - Natural disasters
  - Man-made disasters (complex emergencies)
- Key facts about health & emergencies
- General impact of disasters on health systems
- Public health consequences of natural disasters
  - Floods
  - Drought
- Key conclusions & lessons learned
The Emergency Situation in Africa

- Emergencies (complex or natural) have become common phenomenon globally

- A high proportion of these emergencies occur in Africa:
  - 56% & 83% of global complex emergencies & epidemics between 1995 & 2004 occurred in Africa (Spiegel et al)
  - Africa is second only to Asia in terms of occurrence of natural disasters (Spiegel et al)

- Southern Africa is particularly prone to natural disasters
  - Floods, cyclones, drought & epidemic outbreaks

- In general emergencies negatively impacts on the health & nutrition of affected population
Common Threats in Southern Africa

- **Natural Disasters**
  - Flooding (Namibia, Mozambique, Malawi, Zambia)
  - Drought (Madagascar, Zimbabwe, Namibia)
  - Cyclones (Madagascar)

- **Man-made disasters (complex emergencies)**
  - Political & inter communal crises (South Africa, Madagascar, Zimbabwe)

- **Other disasters**
  - Epidemic outbreaks: cholera, VHF, H1N1,
  - HIV/AIDS & TB
Key Facts about Health & Emergencies

- Morbidities always pre-exists in communities prior to the occurrence of disasters
- Not all natural disasters or emergency have an impact on the health system
- Occurrence of health system consequences of emergencies depends on many factors (Ivers et al):
  - Type of disaster
  - Pre-disaster status of the health system
  - Public health situation & disease pattern of the area prior to the crisis
  - Impact of the disaster on other sectors such as water, sanitation, shelter
  - Population displacement
  - Effectiveness of the response to the disaster
  - Socioeconomic status of the area prior to the emergency
Key Facts about Health & Emergencies II

- Occurrence of public health impact of crises depend on other sectors such as protection, shelter, WASH
- Some emergencies have direct impact on health while some are indirect:
  - Direct: earthquakes/conflicts/mines (trauma, lacerations, fractures, amputations)
  - Indirect: floods/droughts/cyclones (epidemic diseases, malnutrition, mental health & psychosocial problems, MCH)
THE WHO HEALTH SYSTEM FRAMEWORK

SYSTEM BUILDING BLOCKS

- SERVICE DELIVERY
- HEALTH WORKFORCE
- INFORMATION
- MEDICAL PRODUCTS, VACCINES & TECHNOLOGIES
- FINANCING
- LEADERSHIP / GOVERNANCE

OVERALL GOALS / OUTCOMES

- IMPROVED HEALTH (LEVEL AND EQUITY)
- RESPONSIVENESS
- SOCIAL AND FINANCIAL RISK PROTECTION
- IMPROVED EFFICIENCY

ACCESS

COVERAGE

QUALITY

SAFETY

World Health Organization
General Impact of Disasters on Health Systems I

- **Health workforce**
  - Illness, disability & death due to hospital acquired infections, injuries & violence
  - Displacement as a result of insecurity or destruction of living quarters
  - Psychological trauma due to illness, death & disability of colleagues & displacement

- **Health Information Management**
  - Collapse of health information management systems
  - Inability to effectively monitor health performance & status

- **Medical products, vaccines & technologies**
  - Looting of medical supplies & equipment
  - Breakdown of supply chain management system due to insecurity, poor access
  - The above results in drug stock-outs
General Impact of Disasters on Health Systems II

- **Health financing**
  - Diversion of health resources to other sectors such as defense thus resulting in reduced spending on health
  - Increased cost of delivering health care

- **Leadership & governance**
  - Breakdown of strategic policy framework for health
  - Lack of oversight function (supervision, monitoring & evaluation)
  - Inability to enforce health regulations & ensure accountability

- **Health service delivery**
  - All of the above results in:
    - Reduced access to health services
    - Poor coverage of public health interventions e.g. immunization
    - Poor quality of available health services
    - Unsafe health care services
Public Health Impact of Floods

Floods

Socio economic impact

- Loss of livelihoods & assets (reduced access to food)
- Loss of shelter
- Displacement
- Erosion of community social structures & coping mechanisms

Environmental impact

- Destruction of health care infrastructure
- Disruption of social services (water supplies, electricity, latrines)
- Destruction of roads

Effect on infrastructures

- Destruction of sanitation facilities
- Lack of clean water
- Increased parasites in the environment

- Epidemic outbreaks: ARI, measles
- Increased malnutrition
- Mental & psychosocial disorders
- Increased GBV, STI & HIV

- Reduced access to healthcare
- Poor outcomes for chronic diseases
- Increased maternal & child mortality
- Electric shock

Increased morbidity and mortality

- Epidemics: AWD, cholera, malaria, typhoid
- Increased snake bites

Waring & Brown

World Health Organization
A submerged clinic in Namibia...
A looted & abandoned health facility in Uganda...
Public Health Impact of Drought

- Water shortage
  - Crop failure
  - Loss of livestock
  - Increased food price
  - Reduced access to food

- Reduced food intake
  - Loss of purchasing power
  - Displacement/forced migration

- Malnutrition and avitaminosis
  - Epidemics: AWD, cholera, typhoid
  - Skin diseases
  - Eye diseases

- Increased morbidity and mortality
  - Increased illnesses
  - Maternal & child health risks
  - Distortion of community social structures
  - Alcoholism
  - Increased GBV, STI & HIV

- Reduced access to health care
  - Loss of caring capacity

- Distortion of community social structures

- Reduced food intake
  - Loss of purchasing power
  - Displacement/forced migration

- Malnutrition and avitaminosis
  - Epidemics: AWD, cholera, typhoid
  - Skin diseases
  - Eye diseases

- Increased morbidity and mortality
  - Increased illnesses
  - Maternal & child health risks
  - Distortion of community social structures
  - Alcoholism
  - Increased GBV, STI & HIV
Malnutrition in Madagascar...
## Summary of public health impact of disasters

<table>
<thead>
<tr>
<th>Effect</th>
<th>Complex emergencies</th>
<th>Earthquakes</th>
<th>High winds (without flooding)</th>
<th>Floods</th>
<th>Flash floods/tsunamis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>Many</td>
<td>Many</td>
<td>Few</td>
<td>Few</td>
<td>Many</td>
</tr>
<tr>
<td>Severe injuries</td>
<td>Varies</td>
<td>Many</td>
<td>Moderate</td>
<td>Few</td>
<td>Few</td>
</tr>
<tr>
<td>Increased risk of communicable diseases</td>
<td>High</td>
<td>Small</td>
<td>Small</td>
<td>Varies</td>
<td>Small</td>
</tr>
<tr>
<td>Food scarcity</td>
<td>Common</td>
<td>Rare</td>
<td>Rare</td>
<td>Varies</td>
<td>Common</td>
</tr>
<tr>
<td>Major population displacements</td>
<td>Common (may occur in heavily damaged urban areas)</td>
<td>Rare</td>
<td>Rare</td>
<td>Common</td>
<td>Varies</td>
</tr>
</tbody>
</table>
Key Conclusions & Lessons

- Disasters (whether natural or man-made) almost always impact on the health of affected populations ultimately
- Most times addressing the social determinants of health immediately after a disaster reduces the impact of the disaster on the health of populations
- Implementation of risk & vulnerability reduction measures before, during & after disasters mitigates the health impact of disasters
- Development & implementation of emergency preparedness & response programmes reduces morbidity & mortality during disaster
- Use of a health-system-based approach to emergency response ensures effective early recovery of the system
References

- Spiegel et al; Occurrence & overlap of natural disasters, complex emergencies & epidemics during the past decade (1995-2004); Conflict & Health 2007; 1:2
- Ivers LC; Ryan ET: Infectious diseases of severe weather-related & flood-related natural disasters; Curr Opin Infect Dis 19:408-414
- International public health systems: diseases, programmes, systems & policies; chapter 9: complex humanitarian emergencies
Ladies & Gentlemen, many thanks for your attention