PUBLIC HEALTH IMPACT OF DISASTER

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TALKING FLOW

• Introduction
  – Definition
  – Occurrences

• Impact
  – General
  – Public Health

• PH roles

• Conclusion
DISASTER - Definition

A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

(United Nations International Strategy for Disaster Reduction; UNISDR. 2009)
# TYPES OF DISASTER

## 1. Disasters from forces in nature
- Tropical storms (hurricanes, cyclones)
- Floods
- Droughts
- Extreme hot or cold
- Volcanoes
- Earthquakes
- Landslides
- Tsunamis

## 2. Disasters with humans as a factor
- Mudslides from deforestation
- Famine
- Desertification

## 3. Disasters directly caused by people
- Conflict
- Industrial events: explosions, hazardous materials and pollution
- Transportation events

Adapted from The Johns Hopkins and the International Federation of Red Cross and Red Crescent Societies; Public health guide for emergencies
Worst Disasters in the World
DISASTERS IN MALAYSIA

• The disasters recorded include floods, droughts, earthquakes, landslides, mass movement (dry), storms and wildfires

• Malaysia has been vulnerable to flood disasters in the past years

Source: Internationally Reported Losses 1990–2014. The International Disaster Database
Floods in Malaysia
GENERAL IMPACT OF DISASTER

• Disaster leads to the most devastating impacts from the economical, social and health perspectives.

• Disaster loss is on the rise with grave consequences for the survival, dignity and livelihood of individuals, particularly the poor, and hard-won development gains.

In the past 20 years “Although the yearly death totals from disaster declined by approximately 30%, the number of people affected by disaster increased 59%”

(AARC Times. 2006. p. 8)
Factors Contributing to Disaster Severity

• Human vulnerability due to poverty & social inequality
• Environmental degradation
• Rapid population growth especially among the poor

Sources: CDC & EK Noji, The Public Health Consequences of Disaster
$1.7$ trillion damage (USD)

2.9 billion affected

1.2 million killed

Number of Climate-Related Disasters Around the World 1980-2011

PUBLIC HEALTH IMPACT OF DISASTER

• Mortality and Morbidity
• Healthcare Infrastructure
• Environment and Population
• Psychological and Social Behaviour
• Food supply
• Population Displacement

MORBIDITY AND MORTALITY

• Causes deaths, injuries and illnesses.
• Overwhelms medical resources and health services.
Factors Favoring Disease Outbreak

• Rapid onset and broad impact
• Compromised sources of water
• Displacement of large numbers of people
• Temporary sheltering in crowded conditions
• Inadequate sanitation
• Compromised waste management
Factors Favoring Disease Outbreak

- Potential food shortages
- Malnutrition/malnourishment
- Level of immunity
- Ongoing outbreaks prior to disaster
- Compromised infrastructure
- Depleted supplies
- Susceptibility of population
Common Disaster Related Disease Syndromes

Disaster Related Syndrome

1. Diarrheal disease
2. Respiratory syndrome
3. Jaundice syndrome
4. Neurological syndrome
5. Febrile syndrome
6. Others
Jaundice syndrome
- Hepatitis

Neurological syndrome

Febrile syndrome
- Typhoid fever
- Leptospirosis
- Malaria
- DF/DHF
- PUO

Respiratory syndrome
- Influenza
- Pneumonia
- Measles
- URTI

Meningococcal meningitis
Diarrheal disease

Others

- Acute diarrhea
- Cholera
- Dysentery
- Food poisoning

- Viral conjunctivitis
- Animal bite
- Injury (Electrical shock)
- Wound infection
- Unknown death
- Other disease
- Sepsis/ Cellulitis

- Fever with rash
- Chicken pox
- ENT
- Mumps
HEALTHCARE INFRASTRUCTURE

• Destroys healthcare facilities.

• Disrupts routine health services.

• Disrupts preventive activities.

• Long-term increases in morbidity and mortality.
• Increase potential for communicable diseases.
• Exacerbate environmental hazard.
• Increases in morbidity and premature death, decreased quality of life.
ENV. HEALTH ISSUES IN DISASTER

- Shelter and emergency settlements
- Water supply
- Sanitation
- Food safety
- Vector and pest control
- Control of communicable diseases and prevention of epidemics
- Handling of the dead and carcases
- Health promotion and comm. Participation
- Special incidents: chemical and radiation emergencies
CASE STUDY: 
KOTA BHARU, DECEMBER 2014

Conclusion

• The Kota Bharu flood water contained human and animal pathogens of public health importance, some reported for the first time in Malaysia

• Zoonotic bacteria in the majority

• 83% are potential Human and Animal pathogens

PSYCHOLOGICAL & SOCIAL BEHAVIOR

- Generalized panic or paralyzing trauma.

- Increases in anxiety, depression and neuroses.
FOOD SUPPLY

• Disrupted food supply.
• Food shortages leads to micronutrient deficiencies.
• Provoke severe nutritional consequences including famine and starvation.
POPULATION DISPLACEMENT

- Spontaneous or organized population movements.
  - Increase morbidity and mortality.
  - Precipitate epidemics of communicable diseases.

- Crowding and overlay of evacuee and host populations
  - Injuries
  - Violence
PUBLIC HEALTH ROLES

- Manage health operation with interagency coordination
- Facilitate relief of affected people
- Provide support, save lives and relieve suffering
- Assess the needs of affected population
- Match resources to needs efficiently
- Prevent further adverse health effects
- Evaluate relief programme effectiveness
- Plan for future disasters
CONCLUSION

• Disaster implies a sudden overwhelming and unforeseen event
• Could result in a major illness, death, a substantial economic or social misfortune.
• Most impacts are sudden in nature
• Public Health has major role to minimize morbidity and maximize survival for all players and affected people.
• New thinking may be needed to face future disasters
THANK YOU

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