การสาธารณสุขฉุกเฉินและการบริการทางการแพทย์ในภาวะฉุกเฉิน

Public Health in Emergency and MERT

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หัวหน้าฝ่ายบริการทางการแพทย์
สำนักงานบรรเทาทุกข์และประชานามัยพิทักษ์
สภากาชาดไทย
Impact of Disasters on Health

• Breakdown of local health systems.
• Lack of access to health facilities.
• Lack of adequate health personnel.
• Lack of sufficient resources.
• Lack of access to safe drinking water and sanitation facilities.
• Lack of sufficient quantity and quality of food due to the destruction of livelihoods and lack of food stocks

• Increased incidence of different types of diseases, in particular injuries and trauma.
• Increased probability of an outbreak of epidemics and communicable diseases.
• Increased nutritional deficiencies.
• Increased need for mental health and psycho-social support following the sudden onset of a disaster.
• Increased need for medication and medical supplies for people who suffer from noncommunicable diseases and require constant care.
Public Health in Emergency

• โรคติดต่อ (Communicable diseases)
• โรคเรื้อรัง (Noncommunicable diseases)
• อนามัยแม่และเด็ก (Maternal, newborn, child and adolescent health)
• สุขภาพจิต (Mental health)
• การบาดเจ็บ (Trauma and surgical care)
• โภชนาการ (Nutrition)
• ผู้พิการ (Persons with disabilities)
• ผู้อพยพ (Migrant health)
• เพศ (Gender)
• น้ำและสุขาภิบาล (Water Sanitation and Health)
## Expected Injury Patterns by Disaster

<table>
<thead>
<tr>
<th>Type of disaster</th>
<th>Expected injury pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>Heat exhaustion, stroke, dehydration, renal failure, malnutrition and starvation</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Fractures, blunt trauma, wounds, crush syndrome</td>
</tr>
<tr>
<td>Epidemic</td>
<td>Specific to type of infectious disease</td>
</tr>
<tr>
<td>Temperature extremes</td>
<td>Hypothermia, hyperthermia, frostbite, heat stroke</td>
</tr>
<tr>
<td>Slide</td>
<td>Blunt and penetrating trauma, crush syndrome, fractures, wounds</td>
</tr>
<tr>
<td>Volcano</td>
<td>Severe burns, crush injuries, respiratory infections/complications</td>
</tr>
<tr>
<td>Wave/surge/flood</td>
<td>Drowning, hypothermia, waterborne communicable diseases</td>
</tr>
<tr>
<td>Wildfire</td>
<td>Severe burns, respiratory complications</td>
</tr>
<tr>
<td>Windstorm</td>
<td>Blunt/penetrating trauma to head/chest (caused by flying debris), crush syndrome, fractures</td>
</tr>
<tr>
<td>Warfare</td>
<td>Penetrating injury, blast injury, chemical burns, illness from biological warfare, amputations</td>
</tr>
</tbody>
</table>
## Communicable diseases

<table>
<thead>
<tr>
<th>Classification</th>
<th>Diseases possible</th>
<th>Preventive measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air-borne diseases</td>
<td>Acute Respiratory Infections&lt;br&gt;Measles&lt;br&gt;Meningitis&lt;br&gt;Pertussis (whooping cough)&lt;br&gt;Tuberculosis&lt;br&gt;Influenza</td>
<td>Site planning&lt;br&gt;Adequate nutrition</td>
</tr>
<tr>
<td>Water-related diseases</td>
<td>Amoebae&lt;br&gt;Cholera Diarrhoea&lt;br&gt;Dysentery&lt;br&gt;Poliomyelitis&lt;br&gt;Hepatitis&lt;br&gt;Parasites: round/hook worm&lt;br&gt;Typhoid</td>
<td>Site planning&lt;br&gt;Safe water&lt;br&gt;Good sanitation&lt;br&gt;Personal hygiene&lt;br&gt;Case management</td>
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<tr>
<td>Vector-borne diseases</td>
<td>Malaria, Relapsing fever, Sleeping sickness, Dengue hemorrhagic fever, Typhus, Yellow fever, Chikungunya, Leptospirosis, Leishmaniasis, Marburg, Lassa Fever, Ebola</td>
<td>Vector control, Personal protection, Personal hygiene, Case management</td>
</tr>
<tr>
<td>Sexually Transmitted Infections (STIs)</td>
<td>Syphilis, Chancroid, Gonorrhoea, Chlamydia, HIV</td>
<td>Health education, Security, Case management</td>
</tr>
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<td>Preventive measures</td>
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<tr>
<td>Other diseases</td>
<td>Scabies</td>
<td>Hygiene</td>
</tr>
<tr>
<td></td>
<td>Worms</td>
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</tr>
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<td>Tetanus</td>
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# Minimum standards for communicable disease prevention and control

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<th>Intervention</th>
<th>Minimum standards</th>
<th>Target Diseases</th>
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<tr>
<td>Shelter and site planning</td>
<td>Security, health, safety and well-being of the affected population.</td>
<td>Diarrhoeal diseases, ARI, meningitis, TB, HIV</td>
</tr>
<tr>
<td>Water supply</td>
<td>All people have safe and equitable access to sufficient quantity of water for drinking, cooking and personal and domestic hygiene.</td>
<td>Diarrhoeal diseases, typhoid, scabies</td>
</tr>
<tr>
<td>Sanitation and hygiene</td>
<td>Adequate numbers of toilets, safe and acceptable access at all times of the day and night; Access to sufficient soap and other items to ensure personal hygiene, health, dignity and well-being.</td>
<td>Diarrhoeal diseases, polio</td>
</tr>
<tr>
<td>Food safety</td>
<td>Adequate and appropriate food and non-food items Moderate and severe malnutrition is addressed</td>
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<td>Health education</td>
<td>Access to information and services.</td>
<td>Diarrhoeal, malaria, STIs, TB, HIV</td>
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<tr>
<td>Health services</td>
<td>Access to health services, access to clinical services. Children aged 6 months to 15 years have immunity against measles.</td>
<td>All diseases</td>
</tr>
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</table>
| Vector control     | Knowledge and means to protect themselves from disease and nuisance vectors  
Number of disease vectors that pose a risk to people’s health and nuisance vectors that pose a risk to people’s wellbeing are kept to an acceptable level; Note: this includes intermediate hosts like foxes, sheep, rats and others that promote spread of many diseases including viral hemorrhagic fevers, plague, etc. | Malaria, trypanosomiasis, leishmaniasis, dengue, yellow fever, typhus, chikungunya, Japanese encephalitis |
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<td>Environmental control</td>
<td>People have an environment that is acceptable, uncontaminated by solid waste, including medical waste, and have the means to dispose their domestic waste conveniently and effectively; People have an environment in which health and other risks posed by water erosion and standing water including storm water, floodwater, domestic wastewater and wastewater from medical facilities are minimised.</td>
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<td>Epidemic preparedness and response</td>
<td>Measures are taken to prepare for and respond to outbreaks of infectious diseases; Outbreaks of communicable diseases are detected, investigated and controlled in a timely and effective manner.</td>
<td>All diseases</td>
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โรคเรื้อรัง  
Noncommunicable diseases  
เป็นสาเหตุของการเสียชีวิตมากที่สุดในประเทศกำลังพัฒนา
- Hypertension  พบมากที่สุด
- Cardiovascular diseases
- Diabetes Type 2
- Chronic Obstructive Respiratory Diseases
- Kidney disorders
- Bone and Joint Diseases
- Cancers
Actions by Phase of Humanitarian Response

**Mitigation and preparedness**
1. Collect data on country’s pre-crisis NCD profile
2. Review health facilities’ preparedness plans and NCD service-delivery readiness
3. Review national essential-medicines list, drug supply, and stockpiles
4. Support patient-tailored disaster preparedness plans

**Emergency response**
1. Include NCDs in rapid assessments
2. Map NCD service provision (4W)
3. Organise NCD services delivery with a focus on primary health care
4. Provide information about NCD services
5. Promote self-care and adherence

**Post-emergency phase**
1. Debrief and share lessons learned
2. Strengthen health-system response, scaling up NCD integration into primary health care
3. Strengthen public health response, including control of risk factors at both individual and population-based level
## Ranking Health Problem

<table>
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<tr>
<th>Risk of excess mortality or morbidity</th>
<th>Frequency of disease diagnosis</th>
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<tr>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
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- **High**
  - Malaria
  - Diarrhoea
- **Low**
  - Intestinal worms
  - URTI
  - TB
  - Epilepsy
  - Ringworm
  - Arthritis
Maternal, newborn, child and adolescent health

- **Maternal**
  - Prenatal and Obstetric Care
  - Family Planning
  - Immunization

- **Newborn**
  - Immunization
  - Healthcare Services

- **Child**
  - Immunization
  - Education
  - Healthcare Services

- **Adolescent**
  - Education
  - Healthcare Services
  - Family Planning
Reproductive Healthcare

Key facts

• 75% of most refugee populations are women and children including about 30% who are adolescents.
• 25% are in the reproductive stage of their lives, at 15-45 years old.
• 20% of women of reproductive age (15-45), including refugees and internally displaced, are pregnant.
• More than 200 million women who want to limit or space their pregnancies lack the means to do so effectively.
• In developing countries, women's risk of dying from pregnancy and childbirth is 1 in 48. Additionally, it estimated that every year more than 50 million women experience pregnancy-related complications, many of which result in long-term illness or
Reproductive Healthcare

Objective

• To prevent and manage the consequences of sexual violence.
• To prevent and treatment of STIs and HIV.
• To prevent excess maternal and neonatal mortality and morbidity.
• To plan for comprehensive reproductive health services in the early days and weeks of an emergency such as
  – Antenatal care, delivery and postnatal services
  – Family planning
Reproductive Healthcare

Minimum standards of reproductive healthcare:

• Provide access to oral and inject contraceptive.
• Provide access to free condom.
• Providing clean delivery kits.
• Providing midwife delivery kits.
• Initiating the establishment of a referral system to manage obstetric emergencies.
Maternal health and safe motherhood

key facts

• Over 585,000 women die every year (an average of 1,600 per day) as a result of causes related to pregnancy or childbirth--almost all in developing countries.

• Another 15 million women in developing countries suffer acute complications that can lead to lifelong pain, illness, and infertility.

• For the refugee population within the post-emergency phase, pregnancy and child-delivery complications are the leading cause of mortality and morbidity among women.
Maternal health and safe motherhood (Key facts)

- Between 25-33% of all deaths of women of reproductive age in the developing world, is the result of pregnancy or childbirth. It is the leading cause of death and disability for women between the ages of 15 and 49 in the developing world.
- Skilled attendants are present at only 53% of deliveries worldwide and only 40% of deliveries take place at a hospital or health centre.
- Unsafe abortion is a leading cause of maternal mortality world-wide, accounting for 70,000 deaths every year. Millions more suffer long-term health problems such as chronic infection, pain, and infertility.
- 50% of all prenatal deaths are due primarily to inadequate maternal care during pregnancy and delivery.
Trauma and surgical care

- Triage
  - แดง
  - เหลือง
  - เขียว
  - ดำ
- Field Hospital
โรคติดเชื้อ (Infection)
- Measles
- Diarrhea
- Dysentery
- ARI
- Malaria

ภาวะทุพโภชนาการ (Malnutrition)
Persons with disabilities
Migrant health
การบริการทางการแพทย์ในภาวะฉุกเฉิน
Medical Emergency Response Team (MERT)
การบริการทางการแพทย์ในภาวะฉุกเฉิน
Medical Emergency Response Team (MERT)
**TYPE 1 MOBILE**
Provide outpatient initial emergency care of injuries and other significant health care needs

**TYPE 1 FIXED**
Same as Type 1 Mobile but work put of a fixed structure and provide up to 12 hours per day of care, 7 days a week.

**TYPE 2**
Provide emergency care including surgery, 24 hours a day. Deploy field hospitals with at least 20 beds and can replace and support small district hospitals.

**TYPE 3**
Provide inpatient referral care and complex surgery. Provide large 40-100 bed facilities and can support and replace tertiary hospitals.

**SPECIALIZED TEAMS**
Specialize in specific medical area. May be as small as two three senior specialists, or a specialist facility eg. Ebola or Rehabilitation. Must bring appropriate equipment and supplies with them.
องค์ประกอบของทีม MERT

ภาพที่ 1 แผนภูมิแสดงองค์ประกอบของทีม MERT ทีม (จำนวนบุคลากรอาจเปลี่ยนแปลงได้ระหว่าง 16 – 20 คน)