Public Health Responses to Health Risks of Climate Change

Seminar on Climate Change and Health: Exploring the Linkages

UNU-IIGH, UKM Medical Centre, Kuala Lumpur, Malaysia

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Ministry of Health
Outline of presentation

- Introduction
- Vulnerability
- Public health responses
Climate change is a special threat to public health

Persistence of CO2 emitted by the past & current generations

CC is long term and irreversible
Involving our future generations

Persistence of CO2 emitted by the past & current generations

Year of estimated global temperature change

Raissa Sorgho, WHS 2015
• "It means... ‘wait and see’ policy is dangerous?"

• Asking for 100% proof of attribution while the situation deteriorates (smoking deaths, lead childhood deaths, climate related deaths) and in order to avoid responsibilities = payments
The impacts on health

Disasters
Extreme weather

Public health threat of climate change

- Impacts on health care delivery services (interruption/ Failure)
  - Primary
  - Secondary

- Diseases
  - Exacerbation of existing health conditions
  - Distribution of diseases burden
  - Mental health
  - Malnutrition
  - Emerging diseases

Mediated via Ecosystem & Environmental quality changes
Vulnerability

“The first step towards adaptation to future climate change is reducing vulnerability and exposure to present climate variability.”

IPCC, 2014
Who are the most vulnerable?

- The young
- The old
- The Obese
- The PWD
- Pregnant mother
- People with acute and chronic diseases
- Poor people living and working under hot weather
- People living in poor housing conditions (poorly ventilated, no air conditioning, roof made from zinc, too many people)
- People living in disaster prone area
Who are the most vulnerable?

- Health facilities located in disaster prone area
  - Primary health clinics
  - Community health clinics
  - Hospitals
  - District Health Office and other health service centers
State of vulnerability depend on:

- Existing public health status

- Capacity of Public health program that we provide to control the existing health problems and prevent the future impacts
  - Primary prevention
  - Secondary prevention
  - Tertiary prevention
  - Emergency preparedness and response for extreme weather events
State of vulnerability:
Depend on the existing public health problem

Proportional mortality (% of total deaths, all ages, both sexes)*

- Cardiovascular diseases: 36%
- Chronic respiratory diseases: 7%
- Cancers: 15%
- Other NCDs: 12%
- Diabetes: 3%
- Communicable, maternal, perinatal and nutritional conditions: 16%
- Injuries: 11%

Total deaths: 146,000
NCDs are estimated to account for 73% of total deaths.

WHO. Noncommunicable Diseases Country Profiles 2014
Temperature-related risk of NCD


Courtesy of Aditi Bunker, University of Heidelberg (Not yet published)
State of vulnerability:
Depend on the existing public health problem

Impacts mediated via Air Pollution

• Major impacts on the existing NCD
  • Worsened pulmonary function and respiratory distress
  • Acute exacerbation respiratory illness
  • Acute exacerbation cardiovascular events.

In the year 2012, ambient air pollution was responsible for 3 million death, WHO.

Diseases affected by air pollution: 4 of the top 5 causes of the global burden of disease in 2013

GBD 2013 Mortality and Causes of Death Collaborators The Lancet 2014
Public Health Responses
Transition from MDG to SDG 2030

...addressing climate change is the biggest opportunity to meet the set targets of most SDGs

...and wise versa...addressing other SDGs will reduce the state of vulnerability to climate change impacts
Public health responses: Exploring the linkages

- GHG Emissions
- Land use

Climate change

- Health co-benefits
- Health

Mitigation (Climate Policy)

Adaptation (Health Policy)

- Disease
- Death

Mediated via other determinants of health

indirect
Public health responses

Beyond Health sectors

Within Health sectors

Addressing the upstream activities
- Sustainable development
- Health Co-benefit

Reduce Vulnerability
Increase Adaptive capacity
Reduce GHGs emission

- Resilient HCS
- Strengthening public health program
- Reducing carbon emission
Spectrum of Responses/Adaptation to reduce vulnerability and impact

### Primary
- Public health program
  - Disease control program
  - Food quality program
  - Family health program
  - Nutrition program
  - CD control program
  - NDC control program
  - EH program
  - Promoting disease prevention via healthy environment

### Secondary
- Early warning system
- Early detection
- Outbreak management
- Public advisory
- Emergency preparedness & response

### Clinical Intervention
- Diagnostic tools
- Case management
- Rehabilitation

### Resilient Health care delivery system
- Technical support & Research
  (Expertise, SOP, Guidelines, standards)
- Health information and Data systems
  (Disease surveillance, Disease registry, Admission data)
General responses to climate sensitive diseases

Non Communicable Diseases & Mental Health

- Under-nutrition
- Zoonosis
- Vector-Borne Diseases
- Emerging diseases
- Water-Borne Diseases

Emerging diseases
Strengthening all public health programs are the best responses to reduce the state of vulnerability and subsequently reduce the impact of climate change and meet the SDGs targets.
Strengthening Lifecycle public health programs

MATERNAL HEALTH PROGRAM

SCHOOL HEALTH PROGRAM

CHILD HEALTH PROGRAM

SCOPE OF SERVICES:
- Pre-pregnancy Care (hospitals/health clinics)
- Ante-natal Care (hospitals/health clinics / mobile services/home visits)
- Delivery services - institutional (Hospitals)

INTERVENTIONS AND TRENDS OF INFANTS AND UNDER 5 YEAR MORTALITY 1950 - 2007

ADOLESCENT HEALTH PROGRAM

ADULT HEALTH PROGRAM

ELDERLY HEALTH PROGRAM

Five Most Common Morbidities Among Elderly (Jan 2011 – Jan 2014)

ACHIEVEMENTS
- Till June 2014, almost 69% of elderly population registered at health clinics
- Yearly, almost 5 - 7% of elderly population, screened at health clinics

CHALLENGES

1st phase 1996-2010
Development of programs and service for PWD
Health Care for Persons with Disabilities Program and Plan of Action (1996)

2nd phase 2011-2020
Strengthen program and services for PWD

3rd phase 2021-2025
Consolidation of programs and services for PWD

SCH. HEALTH PROGRAM SERVICES:
- Health Risk Screening for Adults (Women and Men)
- Cervical Cancer Screening - Pap Smear
- Vision Examination and referral to eye clinics
- Nutritional Assessment and referrals

ADOLESCENT HEALTH SERVICES
1. Scope of services
2. SCREENING COVERAGE 2009-2013
- 8.00%
- 7.00%
- 6.00%

Elderly Health Care Program for PWDs
Strengthening NCD control program

Multi-sectoral Approach

Seven Strategies:
1. Prevention and Promotion
2. Clinical Management
3. Increasing Patient Compliance
4. Action with NGOs, Professional Bodies & Other Stakeholders
5. Monitoring, Research and Surveillance
6. Capacity Building
7. Policy and Regulatory interventions

National Strategic Plan for Non-Communicable Diseases (NSP-NCD) 2010-2014

- Presented and approved by the Cabinet on 17 December 2010
- Provides the framework for strengthening NCD prevention & control program in Malaysia
- Adopts the “whole-of-government” and “whole-of-society” approach

The Health Gradient

- Environment
- Health hazards
- Individually oriented preventive action
- Environmental health hazards
- Lack of education
- Inadequate food and nutrition
- Unemployment
- Poor Housing
- Poverty

Vector-borne diseases

Malaria

Dengue

Emerging diseases?

Malaysia: Total Malaria Cases: 1990-2015

Number of Cases

Year

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

0 20000 40000 60000 80000 100000 120000 140000

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

0 50000 100000 150000 200000 250000 300000 350000 400000 450000 500000 550000 600000 650000 700000

Vector-borne diseases
Increase In Dengue incidence and outbreak

**ENVIRONMENT**
- Cleanliness
- Waste disposal
- Architecture design
- Urbanization
- High rise building

**HOST (HUMAN)**
- Population movement
- Asymptomatic/ mild cases (human reservoir)

**CLIMATE**
- Rainy season
- Increase Temp

**VECTOR (Aedes)**
- 2 principle vectors (urban/rural)
- Short life cycle (<7 days)
- Multiple bites per feeding
  - Efficient breeder
  - Efficient spreader
  - Trans-ovarial transmission

**VIRUS (DENGUE)**
- No drugs available
- 4 serotypes – multiple infections/secondary infection
- Serotypes shifts
- Viral mutation

**DENGUE PREVENTION AND CONTROL**
- Ineffective & inefficient vector control measures.

**OTHERS**
- Strengthening of surveillance system
- Change in policy – implementation of diagnostic test e.g. COMBO rapid test kit
1. Implemented in April 2009
2. Strengthening on the Dengue prevention and control through seven strategies:
3. In 2014 - NSPD Reviewed and realigned with new strategies and policy
NATIONAL DENGUE SPECIAL TASK FORCE PLAN OF ACTION

A. CASE MANAGEMENT
- Dengue Clerking Sheet
- Home Based Card
- COMBO Rapid Test Kit
- Extended Working Hours in Clinics
- Special Dengue Clinic in Primary Care

B. ENVIRONMENTAL MANAGEMENT & CLEANLINESNESS
- Source reduction
- Outsourcing of Solid Waste Management
- Inspection of Construction site
- Dengue Free Program in School and University/collage

C. VECTOR CONTROL
- Fogging
- Temephos EC spray
- Source Reduction of Aedes Breeding Places
- Outdoor Residual Spray for hotspots area

D. HEALTH PROMOTION & ADVOCACY
- Advertisement in Mass Media
- National Cleanliness Campaign Program
- Program COMBI
- Intervention Kiosk for Health Promotion

INTEGRATED MANAGEMENT

• Ministry of Health
• Ministry of Housing & Local Government
• Ministry of Human Resource
• Ministry of Education
• Ministry of Defence
• Ministry of Communication & Multimedia
• Ministry of Housing & Local Government
• Ministry of Human Resource
• Ministry of Education
• Ministry of Defence
Specific responses to extreme weather events

- Heatwave
- Flood
- Drought
- Other disaster
Framework for public health respond to climate change

- Raising Awareness & capacity
- Technical support
- Inter-sectoral collaboration
- Research
Heat
Heat wave 2016

Respond to heatwave

Clinical Guidelines on Management of Heat Related Illness at Health Clinic and Emergency and Trauma Department, Ministry of Health, Malaysia (2016)

Public health advisory and action plan for heatwave (draft)

Surveillance mechanism for heat related illness

Inter-agency collaboration / action plan during heatwave

Health education
Drought: Forest fire and Haze/Air Pollution

Unresolved issues .....Haze 2015, Prolong and widely distributed

With Climate Change...

Frequency
Intensity of haze due to prolong drought

> 74% of Particulate matter during haze is PM2.5
Progression toward a better response

NHAP


Revision

API Level for closing school
API 400
API 300
API 200

Health Action Plan

2001 2006 2016/17
Health education & Promotion

Public Advisory

Disease Management

Disease Surveillance

Aims

Raise awareness

Reduce exposure

Reduce impacts
With inclusion of PM2.5 for calculation of API by next year, we need to redefine the risk level for school closure and cancelling public/sport events.

<table>
<thead>
<tr>
<th>NHAP Version</th>
<th>API Level for closing school</th>
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<tbody>
<tr>
<td>2006</td>
<td>400</td>
</tr>
<tr>
<td>2012</td>
<td>300</td>
</tr>
<tr>
<td>2013</td>
<td>200</td>
</tr>
<tr>
<td>MOE Instruction (Haze 2015)</td>
<td>150</td>
</tr>
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</table>

Risk Matric for strenuous physical activity:

**Outdoor game**

<table>
<thead>
<tr>
<th>Duration of Sport Activity (Min)</th>
<th>API LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>101 105 110 115 120</td>
</tr>
<tr>
<td>60</td>
<td>1.23 1.31 1.39 1.47 1.55</td>
</tr>
<tr>
<td>50</td>
<td>1.14 1.21 1.29 1.36 1.43</td>
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<td>40</td>
<td>1.10 1.17 1.24 1.31 1.38</td>
</tr>
<tr>
<td>30</td>
<td>1.06 1.13 1.20 1.27 1.33</td>
</tr>
<tr>
<td>20</td>
<td>1.05 1.11 1.18 1.25 1.32</td>
</tr>
<tr>
<td>15</td>
<td>1.02 1.08 1.15 1.21 1.28</td>
</tr>
<tr>
<td>10</td>
<td>1.00 1.06 1.13 1.19 1.26</td>
</tr>
<tr>
<td>0</td>
<td>0.98 1.05 1.11 1.17 1.24</td>
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**Indoor**

<table>
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<tr>
<th>Duration of Sport Activity (Min)</th>
<th>API LEVEL</th>
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<td>90</td>
<td>101 105 110 115 120</td>
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<tr>
<td>60</td>
<td>0.90 0.96 1.01 1.07 1.13</td>
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<tr>
<td>50</td>
<td>0.86 0.92 0.97 1.03 1.08</td>
</tr>
<tr>
<td>40</td>
<td>0.83 0.88 0.93 0.99 1.04</td>
</tr>
<tr>
<td>30</td>
<td>0.79 0.84 0.89 0.94 0.99</td>
</tr>
<tr>
<td>20</td>
<td>0.75 0.80 0.85 0.90 0.95</td>
</tr>
<tr>
<td>15</td>
<td>0.74 0.78 0.83 0.88 0.92</td>
</tr>
<tr>
<td>10</td>
<td>0.72 0.76 0.81 0.86 0.90</td>
</tr>
<tr>
<td>0</td>
<td>0.68 0.72 0.77 0.81 0.86</td>
</tr>
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</table>
Efforts at regional level

- Member of TWG Air Quality under the Regional Forum on Health and Environment in Asia Pacific Region

Current project:
HIA of exposure to particulate matters in Southeast Asia and East Asian Countries
Both Drought and flood events

Impacts on Wa-SH (Water, Sanitation & Hygiene)

**PH response:**
Continue improving the WASH program
SDG 6

**KMAM program**
Water safety plan for all water treatment plants

**RUU safe drinking water**

### DEMOGRAPHIC, HEALTH, AND COVERAGE ESTIMATES

| COUNTRY     | Population (millions, 2017)
<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>National</td>
</tr>
<tr>
<td>Madagascar</td>
<td>25.61</td>
</tr>
<tr>
<td>Malaysia</td>
<td>31.16</td>
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<tr>
<td>Maldives</td>
<td>0.38</td>
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<tr>
<td>Mali</td>
<td>18.69</td>
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<tr>
<td>Mexico</td>
<td>130.22</td>
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<tr>
<td>Niger (Ext. Limits)</td>
<td>0.39</td>
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</table>

<table>
<thead>
<tr>
<th>Use of improved sanitation facilities (% of population, 2015)</th>
</tr>
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<tbody>
<tr>
<td>Urban</td>
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<tr>
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<tr>
<td>Madagascar</td>
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<tr>
<td>Malaysia</td>
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<tr>
<td>Maldives</td>
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<tr>
<td>Mali</td>
</tr>
<tr>
<td>Mexico</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use of improved drinking-water sources (% of population, 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
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<td>-------</td>
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<tr>
<td>Madagascar</td>
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<td>Malaysia</td>
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<tr>
<td>Maldives</td>
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<tr>
<td>Mali</td>
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<tr>
<td>Mexico</td>
</tr>
</tbody>
</table>
Respond to increase resilient to disaster impacts...

Vulnerability assessment

Preparedness and Response Plan
940 Primary Health Clinics (PHC) currently available in Malaysia, 102 (10.9%) have risk of flooding in 20-year ARI; whilst, 71 (7.6%) and 47 (5.0%) PHC’s have risk of flooding in 100-year ARI and 500-year ARI, respectively.

**Table 1: Primary Health Clinics (PHC) affected by flooding at Baseline and ARI-20, 100 & 500**

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>20</th>
<th>100</th>
<th>500</th>
<th>TOTAL</th>
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<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
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<tr>
<td>KEDAH</td>
<td>80 85.1</td>
<td>5 5.3</td>
<td>5 5.3</td>
<td>4 4.3</td>
<td>94</td>
</tr>
<tr>
<td>KELANTAN</td>
<td>44 77.2</td>
<td>5 8.8</td>
<td>6 10.5</td>
<td>2 3.5</td>
<td>57</td>
</tr>
<tr>
<td>MELAKA</td>
<td>24 82.8</td>
<td>1 3.4</td>
<td>2 6.9</td>
<td>2 6.9</td>
<td>29</td>
</tr>
<tr>
<td>NEGERI SEMBILAN</td>
<td>45 97.8</td>
<td>-</td>
<td>1 2.2</td>
<td>-</td>
<td>46</td>
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<tr>
<td>PAHANG</td>
<td>65 79.3</td>
<td>5 6.1</td>
<td>9 11.0</td>
<td>3 3.7</td>
<td>82</td>
</tr>
<tr>
<td>PERAK</td>
<td>65 77.4</td>
<td>9 10.7</td>
<td>6 7.1</td>
<td>4 4.8</td>
<td>84</td>
</tr>
<tr>
<td>PERLIS</td>
<td>7 77.8</td>
<td>-</td>
<td>1 11.1</td>
<td>1 11.1</td>
<td>9</td>
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<tr>
<td>PULAU PINANG</td>
<td>24 80.0</td>
<td>1 3.3</td>
<td>2 6.7</td>
<td>3 10.0</td>
<td>30</td>
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<tr>
<td>SABAH</td>
<td>79 79.8</td>
<td>9 9.1</td>
<td>6 6.1</td>
<td>5 5.1</td>
<td>99</td>
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<tr>
<td>SARAWAK</td>
<td>120 60.9</td>
<td>51 25.9</td>
<td>17 8.6</td>
<td>9 4.6</td>
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<tr>
<td>SELANGOR</td>
<td>57 78.1</td>
<td>5 6.8</td>
<td>5 6.8</td>
<td>6 8.2</td>
<td>73</td>
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<tr>
<td>TERENGGANU</td>
<td>39 86.7</td>
<td>-</td>
<td>5 11.1</td>
<td>1 2.2</td>
<td>45</td>
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<tr>
<td>W.P. KUALA LUMPUR</td>
<td>9 75.0</td>
<td>1 8.3</td>
<td>1 8.3</td>
<td>1 8.3</td>
<td>12</td>
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<tr>
<td>W.P. LABUAN</td>
<td>1 100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
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<tr>
<td>W.P. PUTRAJAYA</td>
<td>3 100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>720 76.6</td>
<td>102 10.9</td>
<td>71 7.6</td>
<td>47 5.0</td>
<td>940</td>
</tr>
</tbody>
</table>

Slide courtesy Dr Bala, EHRC
From 1795 Community Health Clinics (CHC), 173 (9.6%) CHC’s are estimated to have risk of flooding in 20-year ARI. A total of 141 (7.9%) CHC’s have risk of flooding in 100-year ARI and 73 (4.1%) CHC’s with risk of flooding in 500-year ARI.

<table>
<thead>
<tr>
<th>State</th>
<th>Baseline</th>
<th>20</th>
<th>100</th>
<th>500</th>
<th>TOTAL n</th>
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<tr>
<td>JOHOR</td>
<td>214 (82.6)</td>
<td>18</td>
<td>19</td>
<td>8</td>
<td>259</td>
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<tr>
<td>KEDAH</td>
<td>188 (86.2)</td>
<td>17</td>
<td>10</td>
<td>3</td>
<td>218</td>
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<tr>
<td>KELANTAN</td>
<td>131 (74.9)</td>
<td>11</td>
<td>22</td>
<td>11</td>
<td>175</td>
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<tr>
<td>MELAKA</td>
<td>55 (94.8)</td>
<td>0</td>
<td>2</td>
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<td>58</td>
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<tr>
<td>NEGERI SEMBILAN</td>
<td>90 (92.8)</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>97</td>
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<tr>
<td>PAHANG</td>
<td>184 (78.0)</td>
<td>36</td>
<td>14</td>
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<td>236</td>
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<tr>
<td>PERAK</td>
<td>151 (64.0)</td>
<td>41</td>
<td>32</td>
<td>12</td>
<td>236</td>
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<tr>
<td>PERTIS</td>
<td>24 (80.0)</td>
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<td>2</td>
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<tr>
<td>PULAU PINANG</td>
<td>47 (78.3)</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>60</td>
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<tr>
<td>SABAH</td>
<td>125 (75.8)</td>
<td>17</td>
<td>15</td>
<td>8</td>
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<td>SARAWAK</td>
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<td>0</td>
<td>1</td>
<td>7</td>
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<tr>
<td>SELANGOR</td>
<td>86 (74.1)</td>
<td>16</td>
<td>8</td>
<td>6</td>
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<tr>
<td>TERENGGANU</td>
<td>98 (76.6)</td>
<td>11</td>
<td>6</td>
<td>13</td>
<td>128</td>
</tr>
<tr>
<td>W.P. LABUAN</td>
<td>10 (100.0)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1408 (78.4)</td>
<td>173</td>
<td>141</td>
<td>73</td>
<td>1795</td>
</tr>
</tbody>
</table>

Slide courtesy Dr Bala, EHRC
A total of 8 (5.6%) government hospitals have a risk of flooding in 20-year ARI, followed by 11 (7.7%) hospitals with the risk of flooding in 100-year ARI. Only 4 (2.8%) hospitals have a risk of flooding in 500-year ARI.

Table 3: Hospitals affected by flooding at Baseline with ARI-20, 100 & 500

<table>
<thead>
<tr>
<th></th>
<th>RTP</th>
<th></th>
<th></th>
<th></th>
<th>TOTAL</th>
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<tr>
<td></td>
<td>Baseline</td>
<td>20</td>
<td>100</td>
<td>500</td>
<td>n (%)</td>
</tr>
<tr>
<td>KEDAH</td>
<td>9</td>
<td>100.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>KELANTAN</td>
<td>8</td>
<td>88.9</td>
<td>1</td>
<td>11.1</td>
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<tr>
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<td>3</td>
<td>100.0</td>
<td>0</td>
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Slide courtesy Dr Bala, EHRC
Before A Disaster (Preparedness Phase)

- Designing / establish disaster plans
- Dissemination of the plan and provision of training
- Conduct facility-wide / agency-wide drills
- Coordination mechanisms
- Assessing flexibility of surveillance systems


- Continuous Alert system
  - CPRC
  - 7 days/week
  - Daily analysis and report dissemination
  - Monitor outbreak, disasters, incidents
Strengthening Health Systems response: ...What has been done against extreme weather events

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<th>Health response plan</th>
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Technical documents

- Crisis and Disaster Management Plan for MOH (2015)
- Clinical Guidelines on Management of Heat Related Illness at Health Clinic and Emergency and Trauma Department, Ministry of Health, Malaysia (2016)
During A Disaster (Response Phase)

- Adequate staffing
- Planning
- Evacuation
- Transportation
- Food and water supply
- Power supply
- Back-up Generators
- Fuel

Conducting rapid health assessments
Prioritizing relief efforts
Identifying urgent needs and matching resources
Establishment of disaster communications
Conducting disease surveillance
Aftermath responses

Psychological First Aid Services

Disease control activities

WASH

Disease surveillance
Upgrading existing healthcare facilities frequently affected by floods to increase resilient

- either relocated to non-flood prone areas or re-designed and built on stilts or raised platform level at the same site
- Under the 11th Malaysia Plan, RM 162 million has been allocated to upgrade the existing hc facilities to increase resilient
- “Flood Mitigation Wall” which will be built in Hospital Raja Perempuan Zainab II in Kota Bharu, Kelantan
Flood Mitigation Gate

Proposal For HRPZII

Source: Slide Pembentangan Dato’ Dr Ahmad Razin Bin Dato’ Ahmad Mahir, Pengarah Kesihatan Negeri, Jabatan Kesihatan Negeri Kelantan
Our respond will not complete... if we do not address the root causes... the GHGs

The health care industry has a critical role to play in climate change mitigation. Energy usage in medical facilities is highly intensive. In fact, hospitals expend about twice as much total energy per square foot as traditional office space.

---

Addressing the upstream activities advocating the co-benefit of mitigation measures

Reduce carbon emission from health sector

Advocate Climate benefit of Healthy lifestyle & Healthy setting program

(Department of Energy, 2003 Commercial Building Energy Consumption Survey)
...to reduce carbon emission from health sector & maximize health co-benefit

Toward climate friendly health facilities

1. Energy efficiency
2. Promote green building
3. Promote healthy & safe mobility
4. Waste Management 3R
5. Procurement of consumable items

GREEN BUILDING CERTIFICATION ACTION PLAN FOR HOSPITAL LANGKAWI

Prepared by:
Hospital Operation Section
Engineering Services Division
Ministry of Health Malaysia
May 2016

Hospitals to go green

Environmental-friendly move adopted to cut costs, says Liow

"These initiatives show (Malaysians) that they are cut from the same cloth as the other nations in the region. Behind the scenes, leaders in the region are also putting up with the same challenges as those in Malaysia. Modern hospitals are innovating every day to ensure the best outcome for patients."

"When the government introduces new initiatives, we need to ensure that the people are aware of what they are getting and are able to use them to their advantage. This is particularly important as we work towards making Malaysia a green and sustainable nation."

"In the near future, we will be launching the Green Building Certification Action Plan. This plan will guide hospitals in adopting green building practices and promoting sustainability."
Ministry of Health is transforming toward using clean energy
Reduce vulnerability & Reduce GHG emission

Advocate Climate co-benefit of Healthy lifestyle & Healthy setting
Healthy lifestyle: Reduce vulnerability & Reduce GHG emission

Advocate Climate co-benefit of Healthy lifestyle & Healthy setting
...to reduce carbon footprint of health sector & maximize health co-benefit

Strengthening Healthy Setting program

1. Addressing social determinants
2. Addressing environmental determinants
3. Promoting green and blue health
Example of Health Co-Benefit of Green and Blue space

- Improve air quality
- Improve carbon footprint

- Improve mental health
- Reduce all cause mortality
- Reduce CVD
- Improved pregnancy outcome

Green is cool
Addressing the upstream...

...promoting sustainable development, reduce GHGs, reduce pollution, reduce vulnerability.

All development and economic policies are happening at upstream activities.

Advocate health at the center of development activities through various approaches:

- Advocate health co-benefit of climate policy
- Advocate SD through HIA of development projects
- Health Standard
- Collaboration
- Healthier Policy
- Better EH Standard
- Healthier setting
- Well informed community
Effective respond requires a proper understanding ...

Under RMK 11, MOH - established 5 research Clusters
1. Sustainable Environment and Climate change.
2. National health surveys
3. Burden of diseases
4. Non communicable diseases
5. Health services
Conclusion

- Awareness
  - Reduce vulnerability
  - Tackling the existing public health problems

- Addressing up streams activities

- Public Health responses to climate change

- Climate friendly HC facilities

- Technical support
  - Intensify research
THANK YOU