GUIDELINE ON THE PUBLIC HEALTH MANAGEMENT OF MELIOIDOSIS IN PAHANG

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MELIOIDOSIS AND LEPTOSPIROSI
OUTBREAK LUBUK YU MARAN

8 July 2010, Melioidosis and Leptospirosis outbreak reported among Search and Rescue workers in a drowning incidence in Lubuk Yu, Maran, Pahang, a Waterfall Recreation area.

- Rescue work 26- 30th June 2010
- 153 People exposed (85 from government agencies, 68 public)
- No treated water
CASE DEFINITION:

Any individual involved in search and rescue operation in a drowning case in Lubuk Yu Maran from 26-30th June 2010 who presented with fever (>38°C) with any one of the following symptoms:

- Bodyache
- Rigor
- Joint pain
- Headache
- Vomiting
- Nausea
- Diarrhoea
- Cough
- Shortness of breath

- 21 suspected cases (3 govt agencies personnel, 18 public)
Symptomatology of confirmed cases in Lubuk Yu outbreak

- Fever: 100.0%
- Diarrhoea: 90.0%
- Myalgia: 90.0%
- Cough: 80.0%
- Vomiting: 80.0%
- Shortness of breath: 80.0%
- Headache: 60.0%
- Nausea: 60.0%
- Chills: 50.0%
- Arthralgia: 40.0%
21 cases - Age: 29 – 62 years (80% > 40 years)

- 10 confirmed cases:
  - 6 positive *Burkholderia pseudomallei*.
  - 4 positive *Burkholderia pseudomallei* and *Leptospira*.

- 8 died (all has Diabetes)

- Case fatality:
  - *Burkholderia pseudomallei* and *Leptospira* (75%)
  - *Burkholderia pseudomallei* (67%)

- Water and soil samples positive for *Burkholderia pseudomallei* and *Leptospira*. 
Sampling points for water and soil

KEY:
- Soil sampling points negative for B. pseudomallei
- Soil sampling points positive for B. pseudomallei
- Soil sampling points positive for B. pseudomallei and Leptospira
- Water sampling points positive for Leptospira
- Water sampling points positive for Leptospira and B. pseudomallei

Camping sites

Entrance
Water falls
Parking
Lubuk Yu River
GUIDELINES FOR CLINICAL AND PUBLIC HEALTH MANAGEMENT OF MELIOIDOSIS IN PAHANG
GUIDELINE OBJECTIVES

- To create awareness on Melioidosis among healthcare personnel in Pahang.
- To guide medical personnel in the diagnosis and treatment of Melioidosis in order to reduce its mortality rate.
- To guide public health personnel on the prevention and control measures of Melioidosis outbreak.
- To establish a proper and comprehensive database in order to determine the burden of Melioidosis in Pahang.
INTRODUCTION

- Caused by *Burkholderia pseudomallei*, gram negative bacillus
- Endemic in South East Asia and Northern Australia - in soil and stagnant water
- Pahang: Incidence rate - 6.1 per 100,000 population
- The incubation period: 1-21 days (mean of 9)
- Modes of transmission: direct contact with contaminated soil and water, inhalation of contaminated dust particles or ingestion of contaminated water. NO MAN TO MAN TRANSMISSION
- Occur in people with underlying predisposing conditions especially Diabetes mellitus.

![Endemicity of Melioidosis](image)
CLINICAL CASE DEFINITION:

Person having:
- Fever and/or
- Pneumonia and/or
- Single or multiple abscesses and other evidence of infections

AND predisposing factors especially diabetes mellitus

AND history of exposure to high risk activities/occupational hazards, such as agriculture, mining, construction, fresh-water recreation and camping.

Note: In children, predisposing factors may not be present.
CASE CLASSIFICATION:

- **Suspected case:** Any case that is compatible with clinical case definition.
- **Probable Case:** Any suspected case with IFAT IgM ≥ 1: 80.
- **Confirmed case:** Any suspected case with positive culture or positive PCR or a four-fold rise in serological titre.

NOTIFICATION:

All **confirmed** cases of melioidosis must be notified. (administrative)

All cases will be registered in [Pahang Melioidosis Registry](#) at District Health Office
PUBLIC HEALTH MANAGEMENT
1. Notification

All confirmed cases must be notified to the nearest district health office.

2. Investigation

- All case notified must be investigated.

- History of movement of the case during the incubation period including activities or occupational exposure must be established to determine possible source of infection.

- Persons who are likely to be exposed to the common source must be identified and their health status must be assessed.
3. **Case registration**
   All confirmed cases must be registered in Pahang Melioidosis Registry.

4. **Prevention and Control Measures**
   - Based on the investigation, preventive and control measures may vary according to source and the nature of infection.
   - **Case management**
     - For occupationally acquired infections, appropriate personal protective equipment must be recommended
     - Environmental surveillance is not necessary.
Health educations need to be given to case and all exposed persons regarding the disease, mode of transmission and preventive and control measures as follows:

- Seek early treatment.
- Avoid contact with soil or surface water in known endemic locations.
If exposure is unavoidable, personal protective equipments such as glove, mask and suitable clothing for exposure prone occupation must be used especially for people with co-morbidities such as diabetes, pulmonary disease, renal diseases and other chronic diseases.

People in endemic areas are advised to consume chlorinated water or boiled water.

Proper disposal of dead animals or livestock.
Management Of Outbreak

- All outbreaks or any unusual event that are suspected to be an outbreak of Melioidosis must be reported to the nearest district health office.

**Definition of outbreak**
- more than one confirmed case of melioidosis with an epidemiological link within the incubation period (21 days).

1. **Operation Room**
   - Operation room must be set up in the event of an outbreak.
   - Please refer to Infectious Diseases Outbreak Rapid Response Manual for details. District outbreak committee must be alerted and activated if necessary.
Management Of Outbreak

2. Investigation
   • All outbreaks and unusual event must be investigated

3. Case registration
   • Confirmed cases must be registered in Pahang Melioidosis Registry.
3. Prevention and control

- Based on the investigation, preventive and control measures may vary according to source and the nature of infection.
- Preventive measures must be based on knowledge of the groups at particular risk of infection and the local epidemiological factors.
i. Active Case Detection

- All persons who are exposed to the common source must be identified and their health status must be assessed.
- Anybody who develops sign and symptoms of the disease must be referred to the nearest health facility as soon as possible for further management.
ii. Passive Case Detection

- All nearby health facilities must be informed to be on high alert for cases coming to seek treatment among the exposed group.
- They should be managed by Medical Officer and District Health Office must be informed.

iii. Treatment of case

- All cases must be given prompt treatment according to this guideline.
iv. Personal protective equipment

- For occupationally acquired infections, appropriate personal protective equipment must be recommended.

v. Environmental surveillance

- Environmental surveillance must be done. Appropriate samples should be taken and this could include soil, water, air or animal samples.
vi. Management of contaminated area or source of infection

- Disinfection. No Role
- Closure of the contaminated area or infection source under CDC Act 1988 can be considered if necessary to prevent further transmission.
- Alert public or users regarding the hazards of possible contaminated areas.
- Health hazard warning signage needs to be erected by the management authority of the centre in areas found to be contaminated through environment risk assessment.
RISIKO PENYAKIT BERJANGKIT

SUNGAI, KOLAM, AIR TERJUN DAN LUMPUR MUNGKIN DICEMARI BAKTERIA, VIRUS ATAU PARASIT DAN ANDA MUNGKIN BOLEH DIJANGKITI

SEKIRANYA ANDA MEMPUNYAI FAKTOR RISIKO BERIKUT, ANDA TIDAK DIGALAKKAN UNTUK MENGUNJUNGI TEMPAT INI:

1. Kencing Manis (Diabetes)
2. Penyakit Paru-Paru Kronik
3. Penyakit Buah Pinggang
4. Penyakit lain yang merendahkan daya tahan tubuh
5. Luka atau penyakit kulit

JANGAN MINUM AIR YANG TIDAK DIMASAK ATAU DIRAWAT

JAGA KEBERSIHAN PERSEKITARAN. PERSEKITARAN YANG KOTOR MENGUNDANG KEHADIRAN HAIWAN PERUMAH YANG MENINGKATKAN RISIKO PENCEMERAN KUMAN

SEKIRANYA ANDA JATUH SAKIT SETELAH MENGUNJUNGI TEMPAT INI, SILA DAPATKAN RAWATAN DENGAN SEGERA

PESANAN OLEH:
PEJABAT KE SIHATAN DAERAH
vii. Health educations need to be given to case and all exposed persons regarding the disease, mode of transmission and preventive and control measures as follows:

- Seek early treatment.
- Avoid contact with soil or surface water in known endemic locations.
If exposure is unavoidable, personal protective equipments such as glove, mask and suitable clothing for exposure prone occupation must be used especially for people with co-morbidities such as diabetes, pulmonary disease, renal diseases and other chronic diseases.

People in endemic areas are advised to consume chlorinated water or boiled water.

Proper disposal of dead animals or livestock.
4. Risk Communication
In outbreaks which are likely to be public interest, dissemination of information especially to media must be done through proper channel and in accordance to the existing instruction from Ministry of Health.
5. Documentation and report

- All activities during the outbreak should be adequately documented and the report should be disseminated so that further outbreak can be handled more effectively.

- A daily progress report of the outbreak must be sent to Pahang State Health Department.

- A final outbreak report must be sent within one month from the day the outbreak is declared over.
CONCLUSION

- Hope to improve Health Personnel knowledge regarding Melioidosis and its management which will result in reduce mortality

- Burden of disease known through Pahang Melioidosis Registry
  - Able to come up with new programmes or policies in future
THANK YOU