



# WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit  
Ministry of Health, Nutrition & Indigenous Medicine

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Vol. 44 No. 31

29<sup>th</sup>– 04<sup>th</sup> August 2017

## Melioidosis

### Key facts

- Melioidosis is an infectious disease caused by a bacterium, *Burkholderia pseudomallei*.
- Melioidosis infection commonly involves the lungs.
- Melioidosis is diagnosed with the help of blood, urine, sputum, or skin-lesion testing.
- Melioidosis is treated with antibiotics.
- The overall mortality rate is 40%.

### Introduction

Melioidosis, also called Whitmore's Disease, is an infectious disease caused by a bacterium called *Burkholderia pseudomallei* (previously known as *Pseudomonas pseudomallei*-Gramnegative, oxidase positive bacillus). The bacteria are found in contaminated water and soil and spread to humans and animals through direct contact with the contaminated source. The bacteria are also of some concern as a potential agent for biological warfare and biological terrorism. Melioidosis is similar to glanders disease, which is passed to humans from infected domestic animals.

Melioidosis is most frequently reported in Southeast Asia and Northern Australia. It also occurs in South Pacific, Africa, India, and the Middle East. Although Sri Lanka is not considered as a country where melioidosis is endemic, an increasing number of cases have been re-

ported recently. The first published report of melioidosis in Sri Lanka (and the Indian subcontinent) was in 1927 in a European tea broker resident in Sri Lanka, only sixteen years after the disease was initially described by Whitmore.

During the past few years the number of laboratory confirmed melioidosis cases has increased and cases have been reported in wide geographical area in Sri Lanka.

The bacterium that causes the disease is found in the soil, rice paddies, and stagnant waters of the area. People acquire the disease by inhaling dust contaminated by the bacteria and when the contaminated soil comes in contact with abraded (scraped) area of the skin. Infection most commonly occurs during the rainy season.

### Symptoms

Melioidosis symptoms most commonly stem from lung disease where the infection can form a cavity of pus (abscess). The effects can range from mild bronchitis to severe pneumonia. As a result, patients also may experience fever, headache, loss of appetite, cough, chest pain, and general muscle soreness.

The effects can also be localized to infection on the skin (cellulitis) with associated fever and muscle aches. It can spread from the skin through the blood to become a chronic form of

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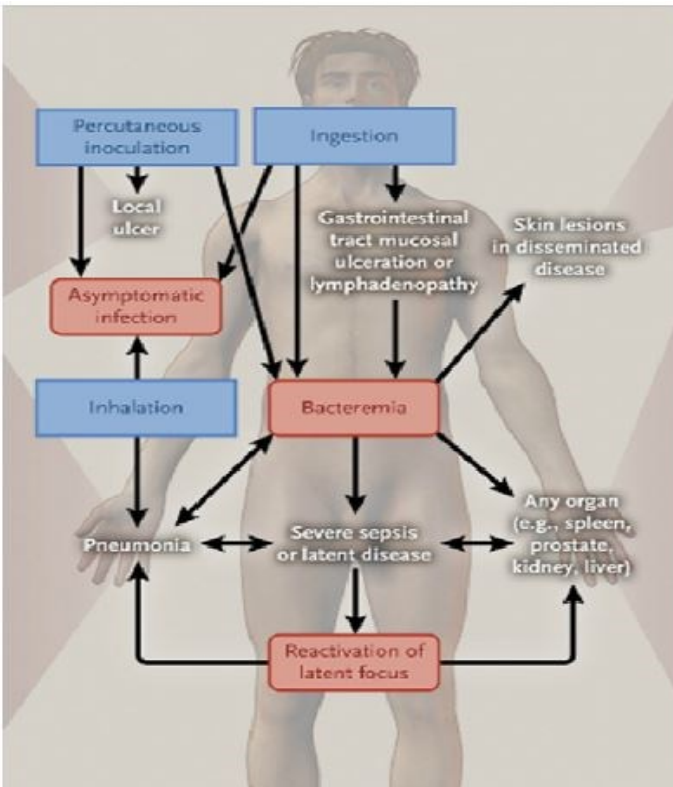
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melioidosis affecting the heart, brain, liver, kidneys, joints, and eyes.

People with Diabetes mellitus, renal disease, liver disease or alcoholism are most likely to get the severe form of the infection. Melioidosis can be spread from person to person as well.



**Diagnosis**

A diagnosis of *B. pseudomallei* infection requires both clinical suspicion and supporting laboratory evidence. The variety of clinical manifestations of infection makes melioidosis difficult to diagnose clinically. The definitive diagnosis depends on the isolation and identification of *B. pseudomallei* from clinical specimens. (blood, urine, sputum, or skin-lesion sample).

A delay in diagnosis can be fatal, since empirical antibiotic regimens used for suspected bacterial sepsis often do not provide adequate coverage for *B. pseudomallei*. Guidelines for empirical treatment of community-acquired pneumonia in endemic regions recommend the administration of antibiotic agents with activity against *B. pseudomallei* in patients with risk factors for melioidosis. Laboratory procedures for maximizing the culture and identification of *B. pseudomallei* have been developed, but a delay in the identification of *B. pseu-*

*domallei* or a misidentification as another species is not uncommon in laboratories that are unfamiliar with this organism. A direct polymerase-chain-reaction assay of a clinical sample may provide a more rapid test result than culture, but the assay is less sensitive, especially when performed on blood. Serologic testing alone is inadequate for confirming the diagnosis, especially in endemic regions where the background seropositivity rate can be more than 50%.

The treatment of melioidosis consists of an intensive phase of 10 to 14 days and oral eradication therapy for 3 to 6 months. A careful search for internal-organ abscesses is recommended, such as with the use of computed tomography or ultrasonography of the abdomen and pelvis. Adjunctive therapy for abscesses includes drainage of collections and aspiration and washout of septic joints.

**Prevention**

Melioidosis is potentially preventable, but there is no evidence base for the development of guidelines for prevention. Although it has been recommended that people with cystic fibrosis be warned about traveling to areas where melioidosis is endemic, no advice is given to tourists in general, despite the steadily increasing number of cases in returning travelers, many of whom have diabetes. It is recommended that people with risk factors such as diabetes or immunosuppressive therapy stay indoors during periods of heavy wind and rain, when aerosolization of *B. pseudomallei* is possible. There is no evidence to support direct human-to-human transmission through respiratory spread.

**Sources**

- 1.Melioidosis, available at <http://www.nejm.org/doi/pdf/10.1056/NEJMra1204699>
- 2.Melioidosis in Sri Lanka, Available at <http://sljid.sljol.info/articles/abstract/10.4038/sljid.v2i1.3801/>

**Compiled by Dr. H. H. W. S. B Herath of the Epidemiology Unit**

Table 1: Selected notifiable diseases reported by Medical Officers of Health 22nd-28th July 2017 (30th Week)

| RDHS Division   | Dengue Fever |               | Dysentery |            | Encephalitis |            | Enteric Fever |            | Food Poisoning |            | Leptospirosis |             | Typhus Fever |             | Viral Hepatitis |            | Human Rabies |           | Chickenpox |             | Meningitis |           | Leishmaniasis |            | WRCD      |           |     |
|-----------------|--------------|---------------|-----------|------------|--------------|------------|---------------|------------|----------------|------------|---------------|-------------|--------------|-------------|-----------------|------------|--------------|-----------|------------|-------------|------------|-----------|---------------|------------|-----------|-----------|-----|
|                 | A            | B             | A         | B          | A            | B          | A             | B          | A              | B          | A             | B           | A            | B           | A               | B          | A            | B         | A          | B           | A          | B         | A             | B          | T*        | C**       |     |
| Colombo         | 1958         | 25847         | 0         | 40         | 0            | 3          | 0             | 21         | 0              | 25         | 0             | 70          | 0            | 2           | 0               | 11         | 0            | 0         | 0          | 4           | 233        | 0         | 19            | 0          | 1         | 21        | 100 |
| Gampaha         | 2135         | 23772         | 1         | 22         | 0            | 12         | 0             | 16         | 0              | 8          | 0             | 35          | 0            | 9           | 0               | 8          | 0            | 1         | 13         | 195         | 0          | 22        | 0             | 2          | 6         | 100       |     |
| Kalutara        | 616          | 7375          | 1         | 39         | 0            | 3          | 0             | 10         | 0              | 50         | 1             | 188         | 0            | 5           | 0               | 3          | 0            | 0         | 7          | 374         | 1          | 89        | 1             | 1          | 1         | 100       |     |
| Kandy           | 1062         | 8308          | 7         | 59         | 0            | 3          | 0             | 4          | 0              | 9          | 1             | 31          | 1            | 95          | 0               | 9          | 0            | 0         | 7          | 162         | 0          | 27        | 0             | 8          | 13        | 100       |     |
| Matale          | 175          | 1864          | 0         | 17         | 0            | 1          | 0             | 1          | 1              | 7          | 0             | 29          | 0            | 2           | 0               | 5          | 0            | 0         | 0          | 34          | 0          | 43        | 0             | 5          | 12        | 100       |     |
| Nuwareli        | 85           | 606           | 1         | 17         | 0            | 7          | 1             | 23         | 41             | 50         | 5             | 30          | 2            | 135         | 0               | 17         | 0            | 0         | 4          | 249         | 0          | 34        | 0             | 0          | 49        | 100       |     |
| Galle           | 332          | 4217          | 1         | 37         | 0            | 7          | 1             | 12         | 0              | 12         | 7             | 203         | 2            | 35          | 0               | 1          | 0            | 1         | 15         | 276         | 2          | 48        | 0             | 0          | 16        | 100       |     |
| Hambantota      | 127          | 2383          | 0         | 15         | 0            | 6          | 0             | 7          | 0              | 17         | 1             | 36          | 1            | 43          | 0               | 7          | 0            | 1         | 7          | 148         | 0          | 15        | 2             | 193        | 9         | 100       |     |
| Matara          | 489          | 4362          | 3         | 25         | 0            | 8          | 0             | 2          | 0              | 5          | 2             | 141         | 3            | 19          | 1               | 5          | 0            | 1         | 5          | 156         | 0          | 4         | 1             | 85         | 9         | 100       |     |
| Jaffna          | 86           | 3430          | 10        | 181        | 0            | 12         | 0             | 28         | 0              | 51         | 0             | 23          | 2            | 397         | 0               | 3          | 0            | 0         | 1          | 134         | 0          | 30        | 0             | 0          | 39        | 88        |     |
| Kiinochchi      | 16           | 352           | 1         | 13         | 0            | 1          | 0             | 9          | 0              | 1          | 0             | 3           | 0            | 12          | 0               | 2          | 0            | 0         | 0          | 3           | 0          | 7         | 0             | 2          | 24        | 100       |     |
| Mannar          | 10           | 499           | 0         | 5          | 0            | 0          | 0             | 2          | 0              | 1          | 0             | 2           | 0            | 2           | 0               | 0          | 0            | 0         | 1          | 13          | 0          | 0         | 0             | 0          | 14        | 100       |     |
| Vavuniya        | 8            | 605           | 1         | 13         | 0            | 0          | 0             | 29         | 0              | 6          | 0             | 24          | 0            | 7           | 0               | 1          | 0            | 0         | 1          | 21          | 0          | 2         | 0             | 9          | 12        | 98        |     |
| Mullaitivu      | 15           | 241           | 0         | 8          | 0            | 1          | 0             | 3          | 0              | 1          | 0             | 15          | 0            | 4           | 0               | 1          | 0            | 1         | 2          | 14          | 0          | 5         | 0             | 1          | 8         | 100       |     |
| Batticaloa      | 60           | 4299          | 1         | 68         | 0            | 8          | 0             | 13         | 0              | 19         | 0             | 18          | 0            | 0           | 0               | 4          | 0            | 1         | 5          | 131         | 0          | 21        | 0             | 1          | 22        | 100       |     |
| Ampara          | 78           | 638           | 0         | 16         | 0            | 2          | 0             | 1          | 0              | 0          | 0             | 11          | 0            | 1           | 0               | 3          | 0            | 0         | 6          | 136         | 0          | 31        | 0             | 3          | 3         | 100       |     |
| Trincomale      | 35           | 4519          | 0         | 13         | 0            | 2          | 0             | 5          | 0              | 17         | 0             | 17          | 0            | 12          | 0               | 17         | 0            | 0         | 0          | 102         | 0          | 18        | 0             | 4          | 17        | 98        |     |
| Kurunegala      | 486          | 7529          | 0         | 49         | 0            | 6          | 0             | 2          | 2              | 16         | 2             | 50          | 0            | 24          | 1               | 16         | 0            | 2         | 10         | 378         | 3          | 45        | 0             | 102        | 10        | 100       |     |
| Puttalam        | 394          | 3557          | 0         | 29         | 0            | 2          | 0             | 2          | 0              | 0          | 0             | 19          | 0            | 11          | 0               | 1          | 0            | 0         | 1          | 110         | 1          | 35        | 0             | 3          | 8         | 100       |     |
| Anuradhapu      | 177          | 2097          | 0         | 26         | 1            | 3          | 0             | 1          | 0              | 10         | 3             | 56          | 0            | 13          | 0               | 9          | 0            | 1         | 3          | 290         | 0          | 46        | 1             | 166        | 8         | 100       |     |
| Polonnaruw      | 48           | 1028          | 1         | 12         | 0            | 5          | 0             | 9          | 0              | 5          | 0             | 30          | 1            | 6           | 0               | 6          | 0            | 0         | 6          | 170         | 0          | 12        | 3             | 88         | 3         | 98        |     |
| Badulla         | 298          | 2405          | 6         | 65         | 0            | 5          | 0             | 7          | 0              | 2          | 4             | 67          | 1            | 75          | 0               | 46         | 0            | 1         | 8          | 256         | 0          | 121       | 0             | 12         | 7         | 98        |     |
| Monaragala      | 109          | 1614          | 1         | 40         | 0            | 3          | 0             | 1          | 0              | 9          | 0             | 92          | 1            | 87          | 0               | 16         | 0            | 1         | 1          | 60          | 0          | 41        | 0             | 13         | 26        | 100       |     |
| Ratnapura       | 715          | 7906          | 3         | 101        | 2            | 64         | 1             | 7          | 0              | 8          | 6             | 409         | 0            | 22          | 0               | 56         | 0            | 0         | 2          | 223         | 1          | 126       | 0             | 16         | 9         | 99        |     |
| Kegalle         | 441          | 6345          | 1         | 27         | 0            | 8          | 0             | 4          | 0              | 17         | 2             | 53          | 0            | 57          | 0               | 11         | 0            | 0         | 9          | 190         | 0          | 46        | 0             | 8          | 10        | 100       |     |
| Kalmune         | 58           | 1929          | 3         | 58         | 0            | 4          | 0             | 4          | 1              | 276        | 0             | 7           | 0            | 0           | 0               | 2          | 0            | 0         | 0          | 112         | 0          | 13        | 0             | 0          | 11        | 100       |     |
| <b>SRILANKA</b> | <b>9899</b>  | <b>126199</b> | <b>40</b> | <b>984</b> | <b>3</b>     | <b>177</b> | <b>3</b>      | <b>222</b> | <b>45</b>      | <b>622</b> | <b>34</b>     | <b>1658</b> | <b>14</b>    | <b>1064</b> | <b>2</b>        | <b>260</b> | <b>0</b>     | <b>11</b> | <b>118</b> | <b>4159</b> | <b>8</b>   | <b>89</b> | <b>8</b>      | <b>723</b> | <b>15</b> | <b>99</b> |     |

Source: esurveillance.epid.gov.lk

\*T=Timeliness refers to returns received on or before 28th July, 2017 Total number of reporting units 344 Number of reporting units data provided for the current week: 342 C\*\*=Completeness

**Table 2: Vaccine-Preventable Diseases & AFP**

**22<sup>nd</sup>– 28<sup>th</sup> July 2017 (30<sup>th</sup> Week)**

| Disease               | No. of Cases by Province |    |    |    |    |    |    |    |     | Number of cases during current week in 2017 | Number of cases during same week in 2016 | Total number of cases to date in 2017 | Total number of cases to date in 2016 | Difference between the number of cases to date in 2017 & 2016 |
|-----------------------|--------------------------|----|----|----|----|----|----|----|-----|---|--|---------------------------------------|---------------------------------------|---|
|                       | W                        | C  | S  | N  | E  | NW | NC | U  | Sab |   |  |                                       |                                       |   |
| AFP*                  | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 02                                       | 41                                    | 37                                    | 10.8%   |
| Diphtheria            | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 00                                       | 00                                    | 00                                    | 0%  |
| Mumps                 | 01                       | 00 | 01 | 00 | 00 | 00 | 00 | 00 | 01  | 03  | 03                                       | 206                                   | 239                                   | - 13.8%   |
| Measles               | 01                       | 01 | 00 | 00 | 01 | 00 | 00 | 01 | 00  | 04  | 03                                       | 145                                   | 301                                   | - 51.8%   |
| Rubella               | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 00                                       | 05                                    | 06                                    | - 16.6%   |
| CRS**                 | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 00                                       | 01                                    | 00                                    | 0%  |
| Tetanus               | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 01                                       | 11                                    | 06                                    | 83.3%   |
| Neonatal Tetanus      | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 00                                       | 00                                    | 00                                    | 0%  |
| Japanese Encephalitis | 00                       | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00  | 00  | 04                                       | 21                                    | 12                                    | 75%   |
| Whooping Cough        | 00                       | 00 | 01 | 00 | 00 | 00 | 00 | 00 | 00  | 01  | 01                                       | 10                                    | 35                                    | - 71.4%   |
| Tuberculosis          | 148                      | 28 | 20 | 03 | 15 | 13 | 06 | 05 | 35  | 273   | 128                                      | 4936                                  | 5449                                  | -9.4%   |

**Key to Table 1 & 2**

**Provinces:** W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.  
**RDHS Divisions:** CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.

**Data Sources:**  
**Weekly Return of Communicable Diseases:** Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,  
**Special Surveillance:** AFP\* (Acute Flaccid Paralysis), Japanese Encephalitis  
**CRS\*\*** =Congenital Rubella Syndrome

**Number of Malaria Cases Up to End of July 2017,**

**06**

**All are Imported!!!**

**PRINTING OF THIS PUBLICATION IS FUNDED BY THE WORLD HEALTH ORGANIZATION (WHO).**

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to [chepid@sltnet.lk](mailto:chepid@sltnet.lk). **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

**ON STATE SERVICE**

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