

C-TEAM

17 - 20 OCTOBER 2017

PHNOM PENH, CAMBODIA

CAMBODIA TRAINING EVENT FOR AWARENESS OF MELIOIDOSIS

BACKGROUND

Leading researchers and health implementers established a Research Coordination Network (RCN) for melioidosis, with the support of the United States Defense Threat Reduction Agency, Cooperative Biological Engagement Program (CBEP), to better define community standards and best practices for research, diagnostics, and clinical work. The RCN gathers expertise, capabilities, and resources to advance knowledge of melioidosis transmission and epidemiology through multidisciplinary research and collaboration. This approach builds advocacy among partner governments, institutions, and individuals, which aims to set the disease as a priority pathogen in affected nations for awareness and subsequent reporting.

To advance its objectives, the RCN convenes meetings, workshops, and other training events. The RCN has conducted several formal meetings: (1) February 2016 in Bangkok Thailand and (2) August 2016 in Cebu, Philippines (in concert with the World Melioidosis Congress Meeting). These meetings were led by members of the RCN steering committee, who represent seven ASEAN states (Singapore, Vietnam, Malaysia, Lao, Cambodia, Philippines, and Thailand) and Australia. The meetings served as forums to outline and prioritize research and policy needs to better understand the health burden and economic impact of melioidosis at national and regional levels. One significant outcome of these meetings included the need to build awareness for the disease at the national and institutional levels in most Southeast Asian countries, which could better enhance mechanisms for prevention, control, and response to all emerging infectious diseases.

OVERVIEW

The Cambodia Training Event for Awareness of Melioidosis (C-TEAM) will be a four-day awareness building and training event that will take place in Phnom Penh, Cambodia 17-20 October 2017. Sponsored by CBEP and co-organized with Cambodia Ministry of Health, this activity will serve as the RCN's first nationally implemented Training Event for Awareness of Melioidosis (TEAM), with the broad objective to not only build general awareness of the disease, but to also foster better coordination amongst multisectoral and multidisciplinary communities of practice to better prevent, detect, diagnose, treat, surveil, and report cases. C-TEAM will be facilitated and led by RCN steering committee members and subject matter experts from the World Health Organization, American Society for Microbiology, Wellcome Trust Research Units in Thailand, Cambodia, and Lao, the Diagnostic Microbiology Development Program, and U.S. Centers for Disease Control and Prevention, among others.

OBJECTIVES

- » Build national awareness of disease burden through increased knowledge among policy makers, clinicians, laboratory technicians, and other relevant stakeholders in One Health (human, animal, and environmental health)
- » Improve the capacities of clinicians and lab staff to safely identify, treat, and report cases; specifically: (a) introduce, train, and disseminate the National Clinical Practice Guidelines for recognition of disease, appropriate specimen collection for diagnosis, patient treatment, follow-up care, and prevention strategies and (b) train and disseminate laboratory SOPs and job aids for identification and isolation of *Bp*
- » Enhance mutual understanding of the roles and responsibilities of clinicians and laboratory staff for better communication, and ultimately improved identification of melioidosis
- » Inform decision makers of needs and gaps for prevention, detection, diagnosis, treatment, surveillance, and reporting; and begin national dialogue on: (a) data collections; (b) data sharing strategies for human, animal, and environmental cases to more accurately determine national and regional prevalence estimates and subsequent control measures; (c) communication strategies; and (d) developing a national strategy and implementation plan

IMPACT

Melioidosis is both an under recognized and under diagnosed disease in most Southeast Asia countries where it is also likely endemic in soil and water, as presumed in Cambodia. Awareness-building events like TEAM should lead to an increased number of culture confirmed cases in humans, which should help better identify national endemicity and disease burden. Further, a better understanding of the disease in Cambodia will help policy makers prioritize resources and funding, and better identify areas of investment for non-governmental and international donor organizations. TEAM should also help clarify common misconceptions associated with the disease by building knowledge and understanding among health care professionals.

POINTS OF CONTACT

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MELIOIDOSIS IN SOUTHEAST ASIA OVERVIEW

DISEASE OVERVIEW

Melioidosis is an often fatal disease caused by the bacterium, *Burkholderia pseudomallei*. It is a disease with a distinct geography, wide-range of clinical presentations, and complex pathogenesis. The bacteria are primarily found in the environment, soil and water, and found to be widely and highly endemic in tropical and subtropical regions.

The disease is acquired primarily through skin inoculation, ingestion, or inhalation; person-to-person transmission is extremely rare, but could occur in laboratories through contact with blood or bodily fluids of infected persons if appropriate safety measures are not taken.

EPIDEMIOLOGY

Melioidosis is endemic across most of South and Southeast Asia and is considered highly endemic in Northeast Thailand, Malaysia, Singapore, and the Northern Territory of Australia where there has been significant research on the disease. Clusters of the disease have been reported and are associated with periods of heavy rainfall and recent data seems to indicate that inhalation may be the predominant route of infection during tropical rain storms and extreme weather events. Increases in reported cases worldwide has led to an expansion of recognized endemic regions for melioidosis.

People with occupational or recreational exposure to soil or groundwater are at the greatest risk for the disease. This includes rice farmers, other agricultural workers, building site laborers, adventure travelers, ecotourists, military personnel, resource extraction workers, and a variety of indigenous groups. People with co-morbidities, including diabetes, excessive alcohol use, chronic renal and lung disease, malignancy or other non-HIV-related immunosuppression, have a high risk of developing melioidosis. Duration between exposure and development of symptoms is usually short (about 9 days). However, some cases may develop the disease rapidly after exposure, but others may have a very long latent period (the longest reported latent period of 26 years).

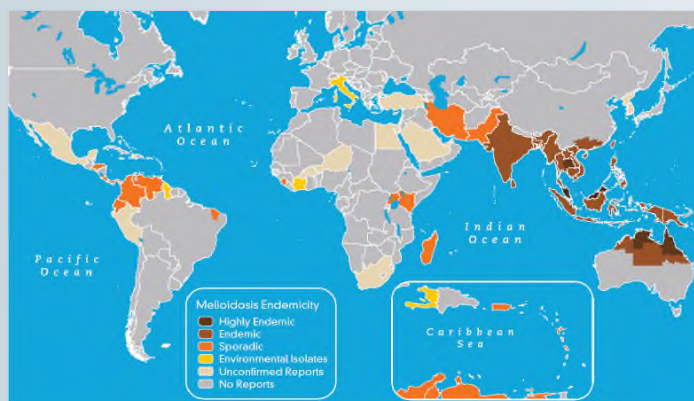


Figure 1: Map of Endemicity Areas which have been characterized as "highly endemic" are also locations where significant amounts of research have taken place. Melioidosis is often underreported and misdiagnosed, research is needed across the equatorial line to fully determine a true map of endemicity.

CLINICAL PRESENTATION

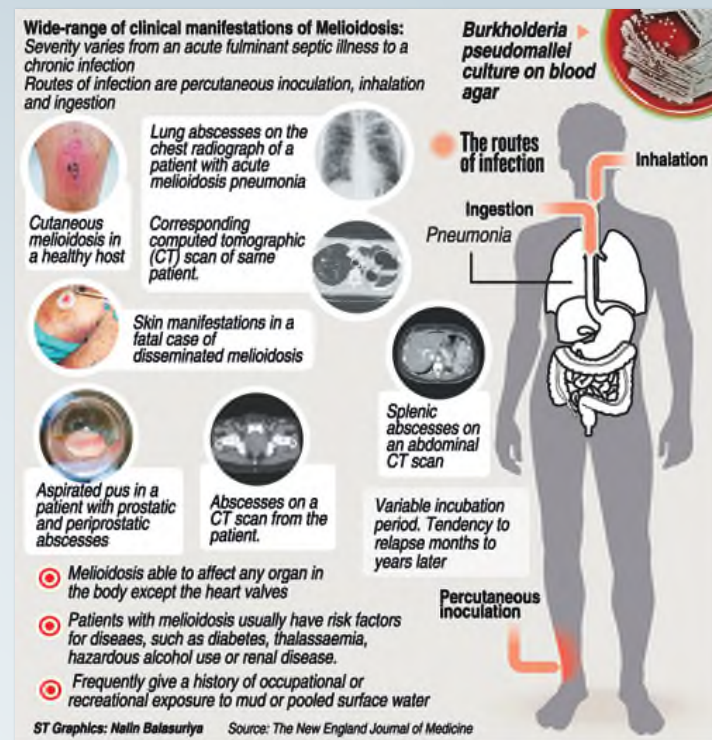


Figure 2: Clinical Manifestations of the disease range from septic illness to chronic infections

Melioidosis clinical manifestations are variable, and can lead to acute, chronic or latent infections. Most cases (85%) are acute melioidosis. The clinical presentation of the disease varies from rapidly fatal sepsis, with or without pneumonia (50% of cases) and abscess-forming infections. Other forms of infection include pneumonia that does not respond to conventional antibiotic therapy and central nervous system infection which has a high mortality rate. It is important to note that even in hospitals that are familiar with the infection (e.g., hospitals in Northern Thailand), the case fatality rate is exceptionally high for those with blood stream infections. Subcutaneous infections are usually focal and melioidosis could affect almost any organ system. Patients with acute melioidosis need at least 14 days of effective parenteral antibiotics (such as ceftazidime or carbapenem), and then at least 12 weeks of oral eradication antibiotics to prevent relapse of melioidosis.

DISEASE BURDEN ESTIMATES

The exact number of people who have died or been treated for melioidosis in SEA is unknown due to underreported cases and general lack of awareness of the disease; though Southeast Asia is predicted to comprise 40% of the worldwide burden. Research in Thailand has averaged the cost per fatal case at around 14,500 USD. The total number of people that die of melioidosis per year is comparable to other common infectious disease (e.g., tuberculosis) in some underdeveloped regions, and researchers have projected that the economic burden of melioidosis in highly endemic country such as Thailand could be 14,500,000 USD / year.