TROPICAL MEDICINE

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What are the prevalent infectious diseases in Laos? How do these differ from those in the UK?

Many of the infectious diseases seen in Laos are typical of its tropical monsoon climate and largely rural population. On the infectious diseases ward, I saw patients with malaria, typhoid, rickettsial infections (such as scrub typhus and murine typhus), melioidosis and dengue. Acute febrile illness is the most common medical presentation in Laos and clinical differentiation between causes is often difficult without input from the microbiology department. Many Lao people work as rice farmers, which puts them at risk of infection with water and soil borne pathogens such as *Burkholderiapseudomallei*, a Gram-negative bacterium that causes melioidosis. Certain dietary customs also increase the risk of infection, such asconsumption of raw or undercooked fish (*Neorickettsiasennetsu*), pork (*Streptococcus suis*), frogs and snakes (*Gnathostomaspinigerum*).

The diseases mentioned above are rarely seen in the UK, except for occasional cases in people who have traveled to high-risk areas. However, many infections are common to both the Laos and the UK, such as streptococcal pneumonia, staphylococcal skin infections and *Campylobacter* gastroenteritis: the tropical climate does not rule out infection with common pathogens!

Some infectious diseases are encountered in both Laos and the UK, but at different rates. For example, the prevalence of hepatitis B infection in the UK is 0.3%, compared with 8% in Laos. Tuberculosis is another disease that is not uncommon in the UK, with a prevalence of 15 per 100,000 population (44 per 100,000 in London); although this figure is still small when compared with Laos, which has a prevalence of 130 per 100,000.

The Lao-Oxford-MahosotWellcome Research Unit (LOWMRU) has made several important advances in the field of tropical medicine in Laos, for example:

- Clinical trials on the treatment of *P. falciparum*malaria that have prompted changes in government policy regarding antimalarial drugs.
- The first published forensic analysis of counterfeit antimalarials, leading to the prosecution of three traders in fake artenusate.
- The first evidence-based antibiotic treatment guidelines in Laos.
- The first clinical trial (worldwide) of murine typhus treatment.

How are health services organised and delivered in Laos? How does this differ from the UK?

Laos is economically one of the poorest countries in Asia, with 74% of the population living on less than 2 USD per day. Lao healthcare services are underdeveloped and poorly funded; Total expenditure on health per capita (intl $) in 2009 was 86, compared with 3,399 in the UK. Life expectancy at birth is 63 years (UK 80 yrs) and both infant and maternal mortality is high.

The healthcare system is composed of a public and a private sector. The public sector includes all hospitals (2 of which are central, 5 regional, 6 specialised, 13 provincial, 122 district), as well as around 500 rural healthcare centres. Private clinics and pharmacies come under the private sector; pharmacies are classified according to the qualification of the owner or manager and 80% of private clinics are in urban areas, mostly Vientiane.

In the UK, the National Health Service (NHS) is funded by taxation and healthcare is free at the point of use for UK residents, with the exception of some dental and optical services. Prescription charges are the same for all drugs and are paid by all working adults. There are some exemptions for those with certain medical conditions or low incomes. Private healthcare in the UK is funded by insurance contributions and is often used by people in addition to NHS services.

A Country Overview by the World Bank in 2005 identified the four main health sector issues in Laos to be: 1) low utilization of healthcare services; 2) poor quality of services; 3) scarcity and uneven distribution of financial resources; and 4) limited capacity of health sector workers, managers and administrators.

In 1999, Mahosot hospital had no accessible blood culture or serology service and there had been no research done on public health or infectious disease in Laos. This meant that the strategies and priorities of government and international organisations were developed without a reliable evidence base, using information extrapolated from neighbouring countries.It was around this time that the Wellcome Unit in Thailand began a series of research projects on tropical diseases in Laos. In 2008, the new Wellcome-funded Infectious Disease Centre was opened, with infectious disease wards and laboratories for molecular and serological diagnosis.

Produce a small piece of work on an infectious disease not encountered in the UK, its epidemiology, pathogenesis, microbiology and management:

I have produced a poster on leptospirosis (attached) and looked into the seasonal variation in the incidence of positive cultures for *Leptospira*.

Has this experience highlighted any areas for personal and professional development? If so, how will you address these?

The main clinical challenge I encountered on my elective was in communicating with patients. As I do not speak Lao, I had to rely on translation by local doctors and, when examining a patient, the "watch and copy" technique (open your mouth, turn your hands over etc). Even more challenging than the language barrier was the fact that I had very little clinical exposure during my time here. In retrospect, I should have known that this would be the case, as I was placed more with the microbiology team than the infectious disease team. I have learnt from this that I definitely do not want a career in microbiology and that I am much more suited to a patient-centred specialty than to laboratory work.

During ward rounds, I noticed (even without speaking the language) that communication between staff and patients is limited and key aspects of the history are often missed out. This highlights the importance of taking a thorough and systematic history and demonstrates how things fall apart when this is not done. I also noted that the infectious disease ward rounds were a less-than-ideal learning environment for the medical students; there is little that can be done about the issue of overcrowding, but I found that patients were presented and discussed in such a slow, vague manner that many of the students lost interest and were not paying attention. When I am presenting patients to a team of colleagues and students, I will endeavour to speak up and keep it concise, to avoid losing my audience!

Outside of the ward, on board rounds for example, I felt that I was out of my depth in terms of the results being discussed. I should have reacquainted myself with the basics of microbiology before starting my placement; something that I will try to do as a junior doctor when beginning a new rotation. I would also like to learn how to read research papers properly, as I often find it difficult to draw any meaning from their conclusions. This is something that will serve me well as a doctor, whichever specialty I end up working in.

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