

ATTACKING MALARIA WITH A MICROSCOPE

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The number of deaths in Cambodia resulting from a lack of equipment necessary to diagnose and treat preventable diseases, such as malaria, is appalling. In 2003 alone, the malaria mortality rate in Cambodia was 494 deaths for every 100,000 people (UNCF, 2005). Many of these deaths could have been prevented if doctors had access to basic equipment. Take, for example, the availability of microscopes. In the United States, microscopes are a basic piece of equipment in any science lab--even high school science classrooms are equipped. Yet in Cambodia, doctors struggling to save people's lives often have no access to the basic science equipment necessary to conduct routine blood tests. Without microscopes, doctors cannot diagnose and treat malaria in its early stages, which results in more advanced, severe cases, higher medical bills, and potentially death. As a McMaster Scholar, I focused my project on malaria testing and increasing the availability of microscopes.

IN ORDER TO SEE MORE CLEARLY

The purpose of my project was to provide underequipped Cambodian hospitals and rural clinics with microscopes and a resource manual for identifying malaria. As a forensic science major, I have gained the necessary scientific background to create a manual to help Cambodian clinics in their efforts to detect malaria earlier. My goal was to learn about the process of malaria identification and the spread of malaria in Cambodia and educate medical professionals so that deaths from malaria can be prevented.

My research questions included:

- ◆ What malaria prevention and treatment measures are currently in place?
- ◆ What similar programs are in place worldwide?
- ◆ What is the procedure followed in identifying malaria?
- ◆ What are the educational theories used for training adults?

PROJECT DESCRIPTION

My project had two goals: to gather microscopes and to train clinic staff on identifying malaria using those microscopes. My project partner and fellow McMaster Scholar, Sarah Stopke, and I contacted a number of U.S. universities, hospitals, high schools, and organizations to solicit microscope donations for our project. Together we were able to gather seven working microscopes for the purposes of this project, five of which required me to

repair them prior to shipment. I worked with Defiance College professor Dr. Nathan Griggs to create a manual on identifying malaria using a microscope. This guide was to be translated and given to Cambodian clinic staff during our training.

IN-COUNTRY ACTIVITIES

While in Phnom Penh my colleague, Ms. Stopke and I bought a few necessary supplies, such as electrical converters and adapters, at the market in preparation for our presentation. We traveled to a rural town along the Mekong River, where we intended to give a hands-on demonstration of the microscope, followed by a session in which the participants could practice using the microscopes aided by the help of my colleagues. We arrived at the clinic, which was an airy, yellow building, and there were multiple folding chairs set up in front of a long table in the open lobby area. Upon our arrival, we discovered that the clinic had no electricity until seven o'clock in the evening when the generator was run, which meant we would not have the time or the light to include the practice session.

Forty-four members of rural clinics throughout the area attended our presentation. We detailed the basics of the lifecycle of malaria, the prevention and treatment of the disease, and described the parts and basic usage of the microscope and its accessories. Following the presentation, we distributed the supplies – microscope, handbook, and spare replacement parts – among the representatives of the various clinics. At the last minute, we developed an informal needs assessment, asking the clinicians what needs they felt were greatest in their area and how the McMaster School could potentially help fill



those needs in succeeding years.

RESULTS

The participants in our presentation appeared to be very engaged. They sat attentively, taking notes and asking questions through an interpreter. They were interested to hear details about the disease of malaria, although it is a disease with which they have had practical experience. However, they were fascinated by the microscope itself, sitting forward eagerly as the basics of usage were demonstrated. During the needs assessment, they clearly indicated that they wanted general knowledge about any diseases, as well as basic equipment for procedures such as child birthing. (One woman had delivered a baby, washed her hands, and rushed to the presentation.) Some of their requests were beyond the scope of what the McMaster School could provide at this time, involving expensive or difficult-to-find equipment, but overall they indicated that they would appreciate any up-to-date information regarding diseases and equipment for basic procedures, such as the microscopes.

REFLECTION

The McMaster experience in Cambodia expanded my global, humanitarian perspective beyond any previous international, academic travel. Prior to departure I researched malaria in depth from the standpoint of my academic discipline. As a result, I have developed a working, professional knowledge of the life cycle and treatment of malaria.

The experience of delivering a presentation to a professional audience in a field related to my own was useful. However, doing this in a country that requires a translator for nearly all communications was a bigger challenge than I had encountered in previous international visits. Honestly, although I have some experience abroad, I felt more like a foreigner in Cambodia than I have felt on previous international trips. This was not a negative experience, however. The experience made me more aware of the perceptions that Americans create for others about the United States and forced me to work harder to prove that I was not there as a tourist, but as someone working together with Cambodians to create change. I returned home with a renewed sense of purpose and felt that a number of Cambodians were better able to improve their quality of life as a result of the McMaster School projects.

REFERENCES

UNCF (United Nations Children's Fund). (2005). World Health Organization World Malaria Report. Retrieved March 2006 from http://www.rbm.who.int/wmr2005/html/exsummary_en.htm