Towards effective emerging infectious diseases surveillance in Cambodia and Indonesia

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Note: The views expressed herein do not necessarily reflect the views of the Department of the Navy or the Department of Defense.

Objectives: Emerging Infectious Diseases pose a new international security threat because of the potential to inflict harm upon humans, crops, livestock, health infrastructure, and economies. H1N1’s impact on the Mexican economy in 2009, for example, has been estimated at almost 1% of Gross Domestic Product. What are the cultural, political, and economic challenges to obtaining the necessary (or desirable) infrastructure to translate common determinants into effective zoonotic virus surveillance? Methods: A qualitative comparative case-study focusing on effective surveillance in Cambodia and Indonesia was undertaken centered on the U.S. Naval Area Medical Research Unit No. 2 as a common denominator. Nearly fifty informants were interviewed in Indonesia and Cambodia.

Results: Many of the similarities interview subjects identified as impeding surveillance systems in Cambodia and Indonesia stem from these states’ status as developing countries. That a lack of financial resources (low salaries for example were mentioned by 42% and 27% of Cambodian and Indonesian respondents, respectively), corruption, patronage networks (mentioned by 33% of Cambodian respondents), and the lack of a professional civil service constitute a challenge in such a context is not surprising. It is reasonable to hypothesize that other developing countries face similar barriers along a continuum from one extreme (Cambodia, a small post-conflict country) to another (Indonesia, a developing country of 230 million). In both countries, this lack of local resources has necessitated heavy donor involvement in order to achieve the present surveillance systems.

Conclusion: Given both countries’ developing country status, it is logical that the primary challenges impeding surveillance are observed on the human resources side of the equation. Nevertheless, as experience in both countries demonstrates, the technical and human sides of surveillance systems are complementary inputs. As such, awareness of economic, political, and cultural issues is critical if policymakers are to build more effective systems.

Giardia in soil of public parks of Culiacan, Sinaloa, Mexico

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Background: Giardia is a nasty parasite, lives in the intestine of infected humans or animals (e.g., cats, dogs, cattle, deer, and beavers); and is passed in feces, and because the parasite is protected by an outer shell, it can survive outside the body and in the environment for long periods of time; is found on surfaces or in soil, food, or water that has been contaminated with the feces from infected humans or animals representing a risk for health human and pets that have contacted contaminated soil of parks; the agent in Giardia is a protozoan called Giardia duodenalis, Giardia lamblia, or Giardia intestinalis, cause symptoms in its host, the human or animal that gets the disease. For many infectious diseases, like food poisoning or the stomach flu, millions of bacteria are necessary before the host has symptoms.

Methods: In order to know the frequency of contamination of soil public park caused by Giardia, was collected 316 samples of soil in 24 different parks of the city of Culiacan, Sinaloa, Mexico. Determined for representative samples described by the technique of Thrusfield (2005) was used: n = [t SD/L]^2, where n = sample size, t = value of the normal distribution (Student t) for a 95% confidence level (t = 1.96), L = accepted error or precision (5%), and SD = weighted disease prevalence (%), was took 100 grams of surface soil scraping for each sample and deposited it in plastic bags; transferred to the laboratory of parasitology of the FMVZ-UAS to be analyzed by zinc sulphate method.

Result: Evidence of Giardia was found in 25% (6) of the parks.

Conclusion: The contamination of soil of with Giardia presents a latent health risk for the population and visitors of these parks, considering they are places of recreation; and therefore should be established health control measures and provide health education.