

## **PUBLIC HEALTH IN PRACTICE AT RISK!**

This is a simple phrase that implies danger, a chance of loss or harm. When the phrase is applied to an agent that may cause illness or disease, it takes on a number of ramifications. For the purpose of limiting the ramifications of the phrase, in this instance it will be applied to a host (or hosts) and a parasite (or a variety of parasites) that can, under the right circumstances, infect the host, an infective agent.

The factors to be addressed in implying that a host is at risk of infection with a parasite (an infective agent) include the following.

1. The underlying risk initially begins with the endemicity of the parasite; “what is the proximity of the parasite to the host?”
2. How does the activity of the host or the parasite (or its vector) bring the susceptible host and the infective stage of the parasite in contact? The parasite and host may exist in the same community and be in close proximity but, unless there is the opportunity for the infective stage of the parasite to come into direct contact with the host, there is limited risk of infection.
3. If the infective stage of the parasite and the host come into direct contact, are there any inhibiting factors that can prevent infection or any that enhance the possibility of infection? The factors of concern relate to host susceptibility. For example, any natural resistance or refractoriness of the host may reduce the risk. On the other hand, general health of the host, including health problems such as malnutrition, intercurrent disease, or a compromised immune system, is a significant factor bearing on increased host risk.
4. The next level of concern is factors that fall into the realm of human ecology, e.g. the habitat of the hosts (or group) and their customs, habits, religion, etc. For example, if the tapeworm *Taenia solium* or the nematode *Trichinella spiralis* are parasites of pigs and man. Where they are endemic in a community in which most people do not eat pork, there would be a low risk of having an adult tapeworm or trichina infection; whereas those living in a community in which most people do eat pork, there would be at a high risk of infection.

Health Departments are generally responsible for activating Public Health services when alerted to the possibility of a disease outbreak within the community. Their Epidemiology Unit is usually activated for investigating incidents where infections occur, especially if those infections that pose a possible epidemic threat. They are also responsible for the Preventive Medical practices that, through inspections, prevent bad health practices that can place citizens at risk of infection and disease.

Regardless of the circumstances, all the factors that apply to any situation that determines that a citizen becomes “at risk” to infection must be taken into consideration. This is the basic principle of “Public Health” practice.