Guest Editorial

Surveillance of Tick-borne Disease Really Is Important

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With every issue, the *Journal of Spirochetal and Tick-borne Diseases* strives to educate health professionals about tick-borne disease. This special section focuses on tick-borne disease surveillance. We intend to inform readers about surveillance processes, illustrate the importance of disease reporting, and summarize epidemiologic features of Lyme disease and other tick-borne diseases throughout the United States.

The word "surveillance" refers to watching over someone or something to monitor or control activity. In public health, surveillance involves collecting and analyzing data used to identify variations in trends or disease distribution; detecting and responding to disease threats; identifying risk factors; and recommending and assessing intervention and prevention strategies. Another component of surveillance is providing feedback of information to health care providers and policy makers. The ultimate goal is to improve public health and welfare and reduce health care costs.

Surveillance data are acquired through disease reporting, over which the states have authority. Each state has its own regulations regarding reporting procedures and a list of notifiable conditions. Reports can be provider initiated (passive surveillance) or health department solicited (active surveillance).[1] Either way, health care professionals are very important to the reporting process and must be cognizant of the benefits of reporting. After a case report has been received, public health officials often conduct case investigations to assess sources of exposure and implement specific control measures. These officials also try to provide timely feedback, supply physicians with knowledge necessary to make accurate diagnoses, and educate the public about the risks of disease.

Not all diseases are reportable. The list of notifiable conditions differs from state to state. At least one tick-borne disease, however, is notifiable in every state; a variety are reported each year. Some, including Colorado tick fever, Rocky Mountain spotted fever (RMSF), tick-borne relapsing fever (TBRF), and tularemia, were first identified many years ago. Newly recognized, emerging, or reemerging tick-borne infections include human monocytotropic ehrlichiosis, human granulocytotropic ehrlichiosis, Lyme disease, and possibly, babesiosis. By definition, emerging infections pose a public health threat. Although not as sinister as ebola or hantavirus pulmonary syndrome, tick-borne illnesses can be, and often are, very serious.

Over the years, analysis of surveillance data has shown a significant decrease in the incidence of TBRF and tularemia, although endemic foci remain. According to these data, RMSF cases occur nationwide—the disease is not limited to the Rocky Mountain states as the name implies. Likewise, Lyme disease cases regularly occur outside the northeastern United States. As epidemiologists gather data pertaining to ehrlichiosis and babesiosis, they will see similar trends and, in all probability, find evidence for previously undetected tick-borne infections.

Although the concepts of surveillance and reporting are fairly straightforward, difficulties are associated with surveillance, diagnosis, and reporting of tick-borne diseases. Surveillance capability varies across the United States. As mentioned, the list of notifiable tick-borne illnesses varies from state to state. As is the case with many infectious diseases, underreporting persists; tick-borne diseases such as RMSF may be underreported by at least a factor of four.[2] To make matters worse, relatively little is known about the incidence and etiologic agents of rickettsial illnesses. Many health care providers have been told that Lyme disease does not occur or rarely occurs in most parts of the United

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States, so these diagnoses may not be considered. Varying strains of tick-borne bacteria, or concurrent infection with two or more organisms, may produce atypical illnesses that do not meet accepted case definitions. Even when tick-borne infections are considered, not many laboratory tests useful during the acute stage of illness when decisions regarding therapy must be made are available. Because of these problems, data concerning tick-borne diseases continue to be collected.

As you read the following surveillance articles, think about reporting. If you are not a designated "reporter," remind someone who is about the importance of reporting. You may play a part in ensuring that a physician correctly diagnoses a case of Lyme disease, that a patient with ehrlichiosis receives an appropriate antibiotic, or that a research scientist gets a grant to study babesiosis.

REFERENCES

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2. Walker DH, Dumler JS. Emerging and reemerging rickettsial diseases. *N Engl J Med*. 1994;331:1651-1652.