Correspondence

Disease Surveillance versus Viral Surveillance

Sr—I would like to respond to the comments made by Dr. Daniel H. Havlicek and colleagues [1] in their recent letter regarding the National Flu Surveillance Network’s (NFSN’s) notification of the media about the 1999–2000 Michigan influenza outbreak.

The NFSN was formed 3 years ago, after consultation with the leadership of Dr. Nancy Cox and the staff of the Epidemiology Section, Influenza Branch, Centers for Disease Control and Prevention (CDC), Atlanta, as well as the infectious diseases and influenza experts in academic settings (H. Eichenwald, P. Glezen, G. Demmler, T. Halpin, M. Hendry, S. R. Mostow, G. M. Schiff, and J. V. Knight). During the NFSN’s 1999–2000 season, >900 independent clinical sites comprising 4200 physicians who work in private practice, emergency departments, acute care centers, hospitals, and health departments volunteered to regularly report the results of rapid flu testing to the NFSN’s sponsors, ZymeTx, Inc. As a public service to 363 city-county areas across the nation, these results were posted regularly on the NFSN Web site (available at http://www.fluwatch.com).

As a result of the NFSN physicians’ diligent surveillance, the NFSN has provided alerts to communities 2–10 weeks in advance of advisories from the CDC that indicate that flu is either present or becoming more prevalent. On the Web site, there is a call to action at each level of prevalence of influenza, to alert individuals about the need for vaccination. Disease surveillance has enlightened many physicians, the general population, and the press that influenza is not a disease that occurs during the 4–6 weeks between Christmas and Valentine’s Day but, rather, is a disease that occurs during a 14–20-week season that begins in October and that can last until April. The physicians of the NFSN are rightfully proud of their public service contribution, and they are driven by the belief that their reporting makes a difference with regard to their communities’ total awareness of influenza.

Our procedure is for notification of the media to occur after state public health departments have been notified of any change in influenza status. This type of influenza surveillance is known as “disease surveillance,” which is entirely different from the “viral surveillance” done by health departments and the CDC. It is in no way meant to replace work done by the CDC and the state health departments to track the types and strains of circulating influenza viruses. Instead, it is meant to be a source of health information for physicians, patients, and the public with regard to the presence and prevalence of influenza in a community. Some of the NFSN physicians have done surveillance for influenza year-round and have detected cases of influenza during the “off” season of the virus. No other private or government entity performs such off-season surveillance.

In their letter, Dr. Havlicek and colleagues [1] posed 3 questions that I would like to answer on behalf of the physicians of the NFSN.

1. “First, can any private entity claim that a state is on alert?” Yes, when in so doing, the public and the community of physicians are given timely information that is correct and can improve care and that is not in conflict with the principles of good surveillance.

2. “Second, when announcements from private entities occur, should they be specifically labeled so that they are identified as different than announcements from government agencies?” The NFSN alerts were clearly labeled as to sponsor, and all such alerts should be labeled in this manner to distinguish that disease surveillance methods, instead of viral surveillance methods, have been used.

3. “Third, in this case, did a private entity purposely use the media purposely to intensify patient concerns about influenza as part of a marketing plan to increase use of their product?” Yes, the NFSN used the media to intensify patient concerns about influenza (1) to increase physicians’ and patients’ awareness of influenza, (2) to increase the rate of vaccination to protect susceptible individuals, and (3) to increase knowledge about new tools for the diagnosis and treatment of influenza.

No government agency provides disease surveillance, a timely tool that is an early-warning-system product of the NFSN. What Dr. Havlicek and colleagues seem to be questioning is whether a public company can disseminate information for the public good. If information is a public service, what does it matter if it is disseminated by a government agency or a public company? Public companies do give great sums to sponsor worthy causes. ZymeTx has spent >$2 million to sponsor and support the NFSN and its aforementioned Web site. This off-season monitoring plan includes performing diagnostic cultures for patients who test positive and then sending the cultures to the CDC for typing.

In this day of invasive commercialism and the resulting cynicism, no offense is taken when a public company’s intent is questioned, but to criticize without having complete knowledge of the facts is...
Some Healthy Skepticism about Inhaled Therapy for Tuberculosis

Str—We certainly are far from determining optimal management of pulmonary tuberculosis. Multidrug treatment of 6 months’ duration is required to achieve predictable cures for drug-susceptible disease [1], and re-treatment regimens of 18–24 months’ duration, perhaps accompanied by resectional surgery, are required to control multidrug-resistant disease [2]. Therefore, the report by Sacks et al. [3] on the use of adjunctive treatment with inhaled aminoglycosides for patients who have pulmonary tuberculosis and sputum smear results and cultures that are persistently positive for Mycobacterium tuberculosis is of potentially great import.

However, the article by Sacks et al. [3] left several critical issues unaddressed and potentially may be profoundly misleading. The article addressed 2 groups of patients: patients with drug-susceptible disease who had delayed conversion of positive sputum smear and culture results to negative status, and a separate group of patients with drug-resistant tuberculosis who had sputum smear and culture results that remained positive “despite ≥2 months of optimal systemic therapy.”

Regarding the first group of patients with drug-susceptible disease, it is well recognized that a small proportion of patients with extensive pulmonary disease are slow to achieve negative culture results while they are receiving chemotherapy. The most important implication of this finding is the requirement for an extended duration of treatment [1]. There is no evidence to suggest that slow conversion is associated with an increased risk for transmission, treatment failure, or acquired drug resistance as long as appropriate chemotherapy is maintained. Therefore, it is difficult to justify the disruption of patients’ lives and the expenses that are associated with treatment with inhaled aminoglycosides. In addition, although it is interesting that inhaled therapy seemed to result in rapid conversion, one cannot determine whether this therapy “simply” helped sterilize the secretions in the airways or whether it actually affected the population of mycobacteria in the walls of the cavity (or cavities). If such therapy achieves the former (but not the latter) effect, patients would have an increased risk for reactivation of disease if treatment were abandoned prematurely.

More confusing is the role of inhaled aminoglycoside therapy in patients with drug-resistant tuberculosis. It is not clear from this article whether inhaled therapy was the only variable that was associated with the reported improvement in these patients. Sacks et al. [3] described standard protocols for the treatment of patients with drug-resistant tuberculosis, but they did not stipulate which or how many active drugs the patients were receiving. Frankly, it is counterintuitive to think that inhaling gentamicin, a drug with very marginal activity against M. tuberculosis, would have a substantial effect against chronic cavitary tuberculosis.

We have cared for a substantial number of patients with multidrug-resistant tuberculosis during the past 20 years. We have performed ventilation-perfusion lung scans on several hundred such individuals while evaluating them for potential resectional surgery. A striking and consistent finding is the absence of ventilation (as marked by the failure of inhaled xenon to reach the area) in regions with chronic cavitary tuberculosis involvement. Therefore, it is quite implausible that inhaled aminoglycosides would be deposited in such lesions in concentrations that would be sufficient enough to exert real killing of mycobacteria.

I believe that the critical question is whether the inhaled therapy truly resulted in long-term, durable improvement for these patients or, rather, transient, “cosmetic” improvement in their sputum status. The authors imply that the former is true, but without clearer evidence, one must remain quite skeptical.

Michael D. Iseman
Clinical Mycobacteriology Service, Division of Infectious Diseases, University of Colorado School of Medicine, Denver

References

Reprints or correspondence: Dr. Michael D. Iseman, Mycobacterial Disease Service, National Jewish Medical and Research Center, 1400 Jackson St., JZ01, Denver, CO 80206 (isemannm@njc.org).

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