Influenza: Getting Our Attention

Frederick L. Ruben
Scientific and Medical Affairs, Sanofi Pasteur, Swiftwater, Pennsylvania

(See the brief report by Podewils et al. on pages 1693–6)

Influenza has become an increasingly frequent topic in the news and medical literature. Although the 1918 influenza pandemic killed more people than died during the first World War, for much of the 20th century, the disease was considered of interest primarily during the winter months, as emergency departments and hospitals filled with sick patients. Less than a decade ago, few pediatricians in the United States could differentiate influenza from other seasonal viral illnesses or could describe its impact on children. However, since the 1990s, influenza has been publicized virtually year-round. Much of this new attention concerns the threat of an influenza pandemic arising from the H5N1 avian influenza strain, which can cross-over into humans. The H5N1 strain first gained attention in Hong Kong, where influenza was then considered to be a relatively unimportant illness. The first reported outbreak of H5N1 infection in 1997 killed one-third of those with confirmed infections. Outbreaks of influenza virus H5N1 infection in humans have subsequently occurred in Vietnam, Thailand, Cambodia, and Laos [1].

Before the H5N1 strain appeared, the impact of influenza was not well appreciated in tropical areas. In 1996, for example, Hong Kong had occurrences of influenza year-round. Fewer than 100 doses of vaccine were used annually, and the medical, social, and monetary costs of influenza were estimated to be proportional to those in developed countries [2]. After the appearance of H5N1, a study conducted in Hong Kong by Chiu et al. [3] revealed that children’s hospitalization rates due to influenza in 1998 and 1999 exceeded those reported in the United States, with the risk for otherwise healthy children in Hong Kong being comparable to that for high-risk US children. These results were obtained in a study specifically designed to measure the impact of influenza with and without the confounding factor of illnesses due to respiratory syncytial virus and, thus, to provide a clear correlation between influenza and untoward outcomes in young children [3].

In the United States, the Centers for Disease Control and Prevention (CDC) describes influenza’s impact in terms of excess mortality. The excess mortality from influenza averaged 20,000 deaths annually through the 1980s [4]; estimates from the 1990s to the present are nearly twice as high [5]. With the documented presence of H5N1 strains in various parts of the world, influenza has become of increasing concern to health care providers and policy makers. Unfortunately, in many regions, the impact of influenza remains unknown—even in countries like India and China, which have surveillance systems in place.

Currently, pandemic planning is occurring at global, national, state, and local levels. The World Health Organization (WHO) has taken a leadership role in preparation for pandemics [6] by monitoring the disease, providing models for planning, promoting manufacturer collaborations on vaccine supply and development, and investigating means to control the spread of H5N1 and related strains. In the United States, the CDC has promoted many of the aforementioned activities and also provided guidance for prioritizing influenza vaccination during supply shortfalls. Other efforts to raise awareness of influenza, its impact, and pandemic preparations are also ongoing. Hong Kong, where pediatric deaths due to avian and human influenza have been documented, is conducting ongoing surveillance for various forms of avian influenza and has instituted expensive practices, including bird slaughter and importation restrictions, to control its spread.

The more we learn about influenza, the more important we understand immunization to be. Reports documenting pediatric hospitalizations [7] and deaths [8] associated with influenza have now resulted in the US adapting a policy to immunize children 6–23 months of age against influenza. The report in this issue from the CDC and the Infectious Diseases
Society of America’s Emerging Infections Network (EIN) further documents how serious and deadly influenza can be [9]. Podewils and colleagues identified potential severe complications of influenza virus infection via a survey of health care providers. They noted that influenza disease in 2003 began with pediatric cases before it spread into the adult population. This pattern is consistent with the well-established knowledge that children—particularly schoolchildren—are the most prolific spreaders of influenza viruses. Furthermore, Podewils et al. [9] found that the earliest influenza cases of the season were identified in the southern-most states, where disease may be detected year-round, similar to patterns of disease observed in subtropical areas. In addition, more cases of influenza were reported among children than among adults, despite the fact that adult health care providers outnumbered pediatric health care providers more than 3-to-1 in this survey. Finally, and most impressively, many severe complications of the illness, including neurological manifestations, hospitalization, severe bacterial infections, encephalopathy, respiratory failure requiring intubation, and death were reported. These data, attained over a single influenza season, may represent a “sneak preview” of the possible effects of pandemic disease.

Both the CDC and the EIN are to be commended for this endeavor, and one can only hope that the survey will be widely read. Infectious disease experts and public health authorities in many areas will benefit from these findings, and are encouraged to institute similar surveillance. Such efforts, in combination with the ongoing efforts of the WHO, the CDC, and other health care providers and policy makers, would undoubtedly contribute to increased influenza control and possibly help avert another pandemic.

Acknowledgments

I would like to thank Dr. Lisa DeTora for her helpful comments and edits of this manuscript. Potential conflicts of interest. F.L.R.: no conflicts.

References