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“One Health is the collaborative efforts of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals, plants and our environment.”

“One Health implementation will help protect and/or save untold millions of lives in our generation and for those to come.”

“Between animal and human medicine there are no dividing lines--nor should there be.”

Rudolf Virchow, MD (the father of cellular pathology)

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Why Should Physicians Be Interested in One Health?

By James M. Hughes, MD, FIDSA

Alert health professionals (physicians, veterinarians, laboratorians, public health officials) have played important roles in initial recognition of new and emerging infectious diseases over the past 40 years. Reviews of the historical experience indicate that approximately two-thirds of such diseases are vectorborne or zoonotic diseases and represent cross-species transmission events. In addition, the majority of Category A biothreat agents represent zoonotic pathogens. Current trends in the 13 factors identified by the Institute of Medicine (IOM) as contributing to disease emergence are operating in favor of the microbes, ensuring that new infectious diseases will continue to arise (SARS and H5N1, pandemic H1N1, and swine H3N2 influenza come to mind as recent examples), and long recognized diseases will continue to appear in new geographic areas (West Nile, monkeypox, and Chikungunya are recent noteworthy examples).

Hot spots for emergence of new diseases have been identified; many of these are in areas of environmental degradation, rainforest intrusion, and deforestation. Until more progress is made in identifying and intervening to prevent cross-species transmission of new agents from animal reservoirs (especially wildlife), humans are likely to remain sentinels for disease emergence and health workers are likely to continue to play important roles in the initial recognition of new diseases.

The veterinary medical community deserves credit for generating interest in the importance of a One Health approach involving transdisciplinary collaboration and opening communication channels across professional categories. Physicians who are interested in or

involved with influenza, antimicrobial resistance, healthcare-associated infections, foodborne diseases, blood, organ, and tissues safety, pathogen discovery, biosafety or biosecurity programs, or bioterrorism preparedness should be supportive and willing to reach out to veterinary medical colleagues. When the SARS pandemic was recognized in early 2003, CDC investigators soon realized that the veterinary community was much more knowledgeable about coronavirus infections than those of us involved in human medicine and public health.

In addition to physicians working in public health, those focused on family medicine, emergency medicine, infectious diseases, occupational medicine, and preventive medicine come to mind as physician specialty groups who should have a vested interest in One Health issues and approaches. When taking a history from a patient with an unexplained febrile illness, it is important to elicit information about occupational and environmental exposures (including hobbies), recent domestic and foreign travel, and pet and wildlife exposure as the responses may provide important clues to the diagnosis or suggest the need for consultation with experts in other disciplines. As efforts continue to add polio and guinea worm to the list of eradicated diseases, the medical and public health communities should recognize the recent success of the veterinary community in the eradication of rinderpest and determine whether lessons were learned that may be relevant to ongoing efforts to eradicate other diseases.

At the policy level, the White House released for the first time a National Strategy for Biosurveillance in July, 2012 calling for an all hazards approach to improving situational awareness and strengthened early detection capabilities for threats to or adverse events in humans, animals, and plants. Recognizing the importance of emerging microbial threats and problems arising at the human, animal, ecosystem interface, medical and public health schools and many professional societies have an important role to play in education of their students and members regarding the importance of interdisciplinary communication and collaboration.

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