One Medicine-One Health:
Implementing the vision in real-world public health

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Abstract

Objective and Background
In the past year, three major health care organizations – the American Veterinary Medical Association, the American Medical Association and the **Society for Tropical Veterinary Medicine** – have officially endorsed the concept of "One Health" recognizing the continuum of communicable infectious disease from humans to animals and animals to humans. Further, there is widespread recognition that continuous robust surveillance of animals is beneficial not only to animal health but to food safety for humans and for early warning of naturally-occurring novel diseases (all of significance have been zoonotic for the past 20 years in the US and elsewhere) and for detecting bioterrorism events (with only one exception, all *human* bioterrorism agents are animal diseases.)

Methods
We report on the ongoing and expanding experience of the use of combined animal and human, commercial "off-the-shelf" clinician-based syndromic surveillance in a large area of northwest Texas and eastern New Mexico which has assisted in the management of outbreaks, the *ad hoc* response to a major disruptive event (hurricane evacuees), detetion of a truy novel disease , and in ruling-*out* a foodborne illness (E. Coli) that might otherwise have led to adverse economic impacts and increased health-care expenditures

Results
Combined animal and human health surveillance, carried out by school nurses, physicians, veterinarians and veterinary assistants, animal control and wild-life rehabilitators provided a robust, accurate, real-time infectious disease "moving picture" to a large segment of the healthcare and public health communities in 44 counties in Texas and 10 counties in Eastern New Mexico. More than 300 clinical cases were reported over the course of the past year, far outstripping traditional "reportable disease" systems in both quantity and highly specific clinical content. One case of a novel disease (rhodococcus) was identified using this approach, enabling the rapid response and education of clinicans via the same system.

Conclusions
The "One Medicine" concept – long embodied in our sydnromic disease surveillance implementation is now recognized by national organizations. It is cost effective, well accepted, and adaptable to a wide variety of infectious disease scenarios including for new (or "emerging" (infectious diseases.) Future disease surveillance systems should include, *a priori*, veterinary surveillance. A properly designed GIS-based reporting system is affordable, embraced by the clinical community, and invaluable for avoiding false positives while providing high confidence in early detection in situational awareness.

References
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