



Food Security and Animal Health: The Global One Health Role of Veterinary Diagnostic Laboratories

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Veterinarians are involved in global food security in a variety of disciplines. In this presentation, I will focus on veterinarians specializing in diagnostic veterinary medicine aspects of food security and zoonotic disease identification. The phrase/acronym Central Veterinary Laboratory (CVL) will be used in this presentation to refer to the major veterinary diagnostic laboratories which are in operation in various countries. These facilities work with State Company veterinarians, smaller laboratories, private veterinarians and animal owners to aid in the early diagnosis of animal diseases in food animals. CVL's essentially serve as the food animal health "Emergency Room" for their country. No other resource in a country can render accurate and timely diagnoses for economically devastating emerging and endemic diseases. Without high quality testing methods and services provided by a CVL, disease control and eradication response programs cannot be implemented effectively. These diseases threaten food safety and security and can result in huge losses of precious economic resources and wholesome food products. This will only lead to further crippling the livestock and poultry industries that are trying to be successful in many

countries. For example, I worked with the CVL in Ethiopia in 2009 on the development of laboratory information systems to provide epidemiological monitoring and reporting of food animal diseases crucial to the success of these business activities. CVL's also assist the food animal agricultural base in countries to organize Veterinary Medical Associations and other specialized groups to help improve animal health and marketability. For instance, as part of a consultant group to the CVL, I assisted the Iraqi Veterinary Syndicate to successfully implement a National Animal Health Plan (NAHP) that was crafted and adopted in Erbil, Iraq in 2006. The CVL also provides the necessary leadership, training and guidance to regional laboratories to be sure that they are operating efficiently and yielding accurate test results. This is accomplished through the implementation of a quality assurance/quality control program that adheres to a recognized standard such as ISO 17025. The CVL and also serves as the reference laboratory for the regional labs. Finally, the CVL is generally the only public resource in a country that can confirm zoonotic diseases in animals. The epidemiological surveillance of animal reservoirs of zoonotic disease provided by a CVL

provides alert data for centralized public health agencies (often referred to as the Ministry of Health) regarding the risk of the transmission of diseases such as rabies, echinococcosis, brucellosis, leptospirosis and avian influenza to the human population. I joined a USAID team in Kabul, Afghanistan in 2009 to work with new CVL and the Ministry of Health to improve awareness of zoonotic diseases in the country to stimulate prevention and control programs. The diagnostic testing services provided by a CVL contribute significantly to the economic and public health and welfare any country. Therefore, it is crucial that the CVL be provided the necessary infrastructure, equipment, software systems, scientists, technicians, utilities, and consumable supplies to adequately complete its mission. As Dr. James H. Steele, the veterinarian who founded the veterinary division of the CDC in the United States in 1945 would say, "We cannot

realize an optimal state of human health without also having good animal health." In spite of the fact that the fertility rate is decreasing in the world, life expectancy continues to increase and world populations continue to grow. It is estimated that meat production will need to increase by 70% between now and 2050 in order to meet the global demand for high quality protein. Truly, countries that do not have full-service, nationally or internationally accredited veterinary diagnostic laboratories will continue to struggle with their goals of achieving good public health and welfare for their human and animal populations. In my career, I have had the great honor and privilege of consulting and working on capacity building to help grow and strengthen the field of veterinary diagnostic laboratories in various countries of the world.