Dr. Yunzhang Hu, a professor at the Institute of Medical Biology in Kunming, further discussed the development of high containment laboratory capacity in China. He noted that China's 2006-2020 national plan on prevention and control for important infectious diseases included pillars on the development of new drugs and vaccines and on an emergency response system. High containment laboratory infrastructure is critical to these research and development efforts. China has established three BSL 4 (P4) laboratories - in Wuhan, Harbin, and Kunming. The laboratories at the Institute of Virology in Wuhan and at the Harbin Veterinary Research Institute are operational, while the "Kunming National Primate Research Center of High Level Biosafety" at the Institute of Medical Biology is proceeding through the process. It just received its certificate from the China National Accreditation Service (CNAS), the designated laboratory accreditation body. The facility will include laboratories at BSL (P) 2, 3, and 4. The P4 laboratory will include 7 principle investigators and 4 functional departments, including departments of biosafety management and of training.

Dr. Hu shared information on plans for the P4 laboratory once it is operational. It is intended that the laboratory will support national emergency response capacity for emerging infectious diseases. It will provide a platform for vaccine research and development, which is a traditional focus of the Institute; the new P4 capacity will enable the Institute to combine high containment research with the vaccine platform components. The desire is for the facilities to provide an efficient pipeline that includes virus isolation, animal model testing, studies to understand pathogenesis, and development of rapid detection methods. These will feed into downstream vaccine processes such as evaluations of safety and efficacy, clinical trials, new drug certification, and GMP production and marketing. The facility will also serve as pathogen seed bank and information center for important infectious diseases. Finally, the facility can be a regional resource and support opportunities through China's One Belt One Road efforts. As the high containment laboratory completes its final processes and becomes operational, Dr. Hu emphasized that ensuring a culture of biosafety will be very important to their success.

Discussion

During discussion, a question was asked on the process for developing the new vaccines at the Kunming Institute. It was indicated that basic research directed toward vaccine development is done within the Chinese Academy of Medical Sciences or in collaboration with others, depending on the particular diseases, and that the researchers are working only with rhesus monkeys, not in other types of primates. A question was also asked about emergency management. It was noted that China CDC has primary responsible for emergency response and management, and technicians from the Institute can accompany China CDC into the field as needed.

CHINESE PERSPECTIVES ON EMERGING INFECTIOUS DISEASES

The last day of the meeting provided an opportunity to learn more about innovative research on infectious diseases being conducted by laboratories in China.