



Dr. Ruben Donis is a molecular virologist, specialized on vaccines and public health. He earned his Veterinary Medicine degree from the University of Buenos Aires, Argentina, in 1978 and his Ph.D. in Virology from Cornell University, Ithaca, New York, in 1986. He trained on influenza virology as a postdoctoral fellow at St. Jude Children's Research Hospital, in Memphis, Tennessee, under the supervision of Dr. Robert Webster.

Dr. Donis began his career as assistant professor of virology at the University of Nebraska-Lincoln, in the United States in 1989. Dr. Donis was a professor at the University of Nebraska-Lincoln, where he conducted research on influenza and flavivirus molecular biology, taught courses on virology and bioinformatics and coordinated the Intercampus Virology Meetings. After his promotion to Professor he also participated in the leadership of the UNL Center for Biotechnology and served as virology consultant to government and industry organizations.

Dr. Donis joined the Influenza Branch of the Centers for Disease Control in 2003 as Chief of the Molecular Genetics Section, to lead influenza molecular biology research and vaccine development and contribute to the terms of reference of the World Health Organization Collaborating Center for the Surveillance, Epidemiology and Control of Influenza in Atlanta, Georgia, USA. From 2007 to 2012 he served as Chief of the Molecular Virology and Vaccines Branch of the Influenza Division with responsibility to develop expanded risk assessment capacity at the animal-human interface in the Division. In this period, he contributed to the discovery of canine influenza virus (2005) and bat influenza virus (2012). In 2012, Dr. Donis became Associate Director for Policy, Evaluation and Preparedness at the Influenza Division. In this capacity, he oversees programs related to influenza vaccines and pandemic preparedness and policy, including risk assessments based on the properties of emerging viruses and their evolution.

Since 2004, Dr. Donis serves as adjunct Professor of Microbiology at Emory University School of Medicine. Dr. Donis is member of the Editorial Board of Virology and Plos Currents and contributes to the mission of the Biomedical Advanced Research and Development Authority and Public Health Emergency Countermeasures Enterprise of the Department of Health and Human Services, the OIE-FAO Network of Expertise on Influenza (OFFLU) Swine Influenza Virus Surveillance Group, and the World Health Organization Consultation on the Composition of Influenza Vaccines.

## **RUBEN DONIS**

Chief of the Molecular  
Virology and Vaccines  
Branch

*Centers for Disease Control  
and Prevention  
USA*

# ENABLING ONE HEALTH POLICY ENVIRONMENTS – VIEWS FROM THE PUBLIC SECTOR:

Centers for Disease Control and Prevention  
and the United State Department of Agriculture

Ruben O. DONIS, PHD and Joseph F. ANNELLI, DVM, MS

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This conference focuses on interdisciplinary collaborations and communications, otherwise known as a “One Health” approach, in all aspects of policy and actions for human, animal and environmental health. Influenza epitomizes the Conference theme of “A world united against infectious disease: cross-sectoral solutions” .The world’s human and animal health officials have been galvanized since the emergence of and recognition that the highly pathogenic H5N1 avian influenza virus was not only lethal to birds but also to people (WHO report on the cumulative number of cases and deaths as of December 17, 2012 was 610 cases with 360 fatalities). Over the last several decades, tens of thousands of people have died from emerging pandemic zoonotic diseases, including over 18,000 who died from the 2009 H1N1 influenza pandemic which also caused over \$200 billion in economic losses.

Recently it was discovered that people were infected with a variant of the H3N2 virus found in swine at state and county fairs in the United States. This situation, described in detail in various Morbidity and Mortality Weekly Report articles

(an example below) will be used as the “case study” for how various public sector organizations worked together to identify cases , characterize the situation, develop options for mitigation, and implement intervention strategies that minimized both disease transmission and economic impact.

Morbidity Mortality Weekly Report. 2012 Jul 27;61(29):561.

Notes from the field: Outbreak of influenza A (H3N2) virus among persons and swine at a county fair--Indiana, July 2012. Centers for Disease Control and Prevention (CDC).

During July 12-16, 2012, the Indiana State Department of Health and the Indiana

Board of Animal Health identified respiratory illness among swine and persons at a county fair held July 8-14. On July 16, specimens were collected from four persons with respiratory illness; two had become ill on July 12 and sought care at an emergency department, and two were identified as part of the subsequent public health investigation. All four persons were swine exhibitors or family

members of swine exhibitors and had close contact with swine. On July 18, reverse transcription-polymerase chain reaction testing at the Indiana State Department of Health laboratory identified suspected influenza A (H3N2) variant (H3N2v) virus\* in all four specimens. On July 21, partial genome sequencing at CDC confirmed H3N2v virus with the influenza A (H1N1)pdm09 virus M gene; the viruses detected in the four specimens are similar to 12 viruses detected in 2011 and one detected earlier this year. None of the four persons were hospitalized, and all have fully recovered. PMID: 22832938 [PubMed - indexed for MEDLINE]

Some of the policies and factors that enabled effective cross-sectoral collaboration to investigate these influenza infections at fairs were: 1) Establishment of a plan or framework for zoonotic disease case investigations engaging public and private organizations, 2) High level and flexible plans for all aspects of the investigation: epidemiologic and virologic studies, sample collection, testing, reporting results, communication plan, identification of key personnel, 3) Effective and timely communication, including frequent teleconferences, 4) Transparent data sharing, and perhaps most important; 5) Trust. One of the constraints that was removed was the provision of funding to meet the expectations of the plan.

This session will address both the enablers and barriers to multi-sectoral collaboration and strategic approaches, policy interventions, instruments and tools that we have used to improve the outcomes of these situations. We will also identify some of the essential characteristics of a one health workforce that is necessary to develop political will and create new environments that enable and reward multi-sectorial collaborations.