



PMAC | PRINCE MAHIDOL
AWARD CONFERENCE **2018**



PARALLEL SESSION 2.4

**CHANGING DYNAMICS: EMERGING INFECTIOUS DISEASES AND ANTIMICROBIAL
RESISTANCE IN AN ERA OF EXPANDING GLOBAL HUMAN POPULATION
GROWTH AND MOVEMENT**



| BACKGROUND

The global human population is projected to peak at over 11 billion this century. Accelerated human population growth and corresponding changes in demography, along with associated food and companion animal population increases, are altering disease dynamics and will continue to drive emerging infections and transmission over the course of the next century. This session will explore the connections among infectious disease emergence, antimicrobial resistance (AMR), and changing human and animal population dynamics. We will explore the state-of-the-art in emerging disease and AMR detection and forecasting and answer the question, “How can we minimize emerging disease and AMR risks linked to changing demography.”

| OBJECTIVES

This session aims to explore and address the impacts of growing human and animal populations and unplanned mega-cities and peri-urban settlements on disease emergence, amplification, and global distribution. Accordingly, presenters will also tackle the risks associated with surging global trade and travel and illustrate how forecasting can inform risk mitigation.

Specific Objectives:

- Explore projected demographic trends over the 21st century and their impact on expected zoonotic disease emergence and AMR
- Enhance understanding of how trends in demography will differ regionally; how differences in agricultural productivity and marketing practices will impact emerging disease risk, including spread of AMR; and how purchasing power and animal protein demand will have global supply chain impacts and associated emerging disease risk
- Highlight practical, evidence-driven approaches to defining, forecasting, and mitigating human demographic-driven emerging disease risk



Moderator

Jonna Mazet

Professor Medicine & Epidemiology

University of California at Davis
United States of America

Jonna Mazet, DVM, MPVM, PhD, is a Professor of Epidemiology and Disease Ecology and Executive Director of the One Health Institute in the UC Davis School of Veterinary Medicine, where she focuses on global health problem solving, especially for emerging infectious disease and conservation challenges. Dr. Mazet is active in international One Health research programs, most notably in relation to disease transmission among wildlife, domestic animals, and people and the ecological drivers of disease emergence. Currently, she is the Global Director of a \$175 million viral emergence early warning project, named PREDICT, that has been developed with the US Agency for International Development's (USAID) Emerging Pandemic Threats Program. She was elected to the US National Academy of Medicine in 2013 in recognition of her successful and innovative approach to emerging environmental and global health threats and serves on the National Academies' Forum on Microbial Threats, as well as chairs the Academies' One Health Work Group.



Panelist

Christine Johnson

Professor and Researcher

UC Davis
United States of America

Christine Kreuder Johnson is Professor of Epidemiology and Associate Director of the One Health Institute in the School of Veterinary Medicine at UC Davis where she directs the EpiCenter for Disease Dynamics. Her research activities focus on zoonotic disease spillover and spread dynamics, epidemiologic drivers of zoonotic disease transmission, ecosystem level processes that impact wildlife population health and emerging infectious diseases, and mechanisms underlying species declines. She provides epidemiologic support to national and state agencies during unusual outbreak events and has developed and implemented risk-based approaches for surveillance and standardized risk assessment to enable systematic data analysis across a range of field studies from the local to global scale. At UC Davis, her accomplishments include the design of core didactic instruction in one health, ecosystem health, and population health for graduate and professional degree programs and primary mentorship to over 45 graduate students and post-doctoral scholars. Since 2009, Professor Johnson has served as epidemiologist for USAID's Emerging Pandemic Threats PREDICT project, optimizing global surveillance activities to identify infectious disease threats at high-risk animal-human interfaces and working with host country governments and international organizations to meet global health priorities. Since 2014, she has directed surveillance activities for PREDICT to implement concurrent animal and human sample and data collection needed to detect disease spillover, amplification, and spread and inform risk mitigation strategies.



Panelist

Evelyn Wesangula

Coordinator

Global Antibiotic Resistance Partnership
Kenya

Evelyn is a pharmacist with an Msc. in Tropical and infectious Diseases who has over ten years experience at the Ministry of Health in Kenya. She has successfully championed the development of the National Policy and Action Plan for Antimicrobial Resistance in Kenya from a multi-sectoral perspective. She has been key in the implementation of infection prevention and control (IPC) interventions, antimicrobial resistance (AMR) surveillance activities, and antibiotic stewardship and awareness programs at a national level. As a member of the infection prevention and control team at the National Level within the Ministry of Health and she has supported the development and implementation of the National Infection Prevention and Control Guidelines and a national training curriculum for basic infection prevention and control for health care settings. Evelyn has organized antibiotic awareness weeks for five consecutive years in Kenya. This contributed to the establishment of the AMR program within the Ministry of Health. This year she will support the development of the National antimicrobial stewardship guidelines for Kenya. She has worked as a consultant with the World Health Organization on developing guidance on establishing and sustaining multi-sectoral collaboration to support implementation of the National Action Plans and was recently appointed as a member of the Fleming Fund Technical Advisory Group. She is currently pursuing her PHD on antimicrobial stewardship at the University of Nairobi, School of Pharmacy. Evelyn is committed to overcoming barriers, work with partners within and from outside her country to sustain changes that will reduce the burden of AMR in Kenya.



Panelist

Katrin Kohl

Deputy Director Division of Global Migration and Quarantine

Centers for Disease Control and Prevention
United States of America

Biosketch Dr. Katrin Kohl Dr. Katrin Kohl is Deputy Director of the Division of Global Migration and Quarantine in the National Center for Emerging and Zoonotic Infectious Diseases at the U.S. Centers for Disease Control and Prevention. Dr. Kohl provides leadership to domestic and international programs that address health issues and threats related to international travel, importation of infectious diseases into the United States, and mobile populations through the Division's 5 organizational units: Quarantine and Border Health Services, Traveler's Health, Immigrant, Refugee and Migrant Health, Community Interventions for Infection Control, and a U.S.-Mexico Binational Unit. Dr. Kohl co-leads the implementation of the International Health Regulations at the Centers for Disease Control and Prevention in close collaboration with the World Health Organization, the Department of Health and Human Services, and the U.S. state health departments. Dr. Kohl was involved in leadership roles in numerous CDC-wide responses including the 2009 H1N1 influenza pandemic, the 2014 importation of MERS Coronavirus to the U.S., the 2014 Ebola virus disease outbreak in West Africa, and the 2015 Zika outbreak. Her primary focus is the mitigation of disease importation and exportation through travelers. Dr. Kohl obtained a medical degree and a PhD in Cardiology from the Free University of Berlin, Germany and a Master in Public Health and a Diploma in Tropical Medicine from Tulane School of Public Health and Tropical Medicine in New Orleans, USA. In 1997, Dr. Kohl joined the Centers for Disease Control and Prevention as an Epidemic Intelligence Services Officer based in Louisiana, completed a Preventive Medicine Residency at CDC in the Division of Sexually Transmitted Diseases, led a large vaccine safety team including building a global vaccine safety collaboration, and joined her current Division in 2006.



Panelist

Saber Yezli

The Global Centre for Mass Gatherings Medicine, Public Health Directorate

Ministry of Health
Saudi Arabia

Dr Saber Yezli is the Head of Research at the Global Centre for Mass Gatherings Medicine, a WHO collaborating center on Mass Gatherings Medicine. He obtained his first class BSc (Hons) degree in Genetics in 2003 and his PhD in molecular biology in 2008 from Cardiff University, UK. A pioneer in the emerging field of mass gatherings health, Dr Yezli started his career in the area of hospital acquired infections and antimicrobial resistance to later expand to infectious disease and public health, with particular interest in mass gatherings and mass gatherings health. In the last few years Dr Yezli led numerous Hajj-related research for providing evidence-base for appropriate public health policy making for the event. Dr Yezli is a member of the UK Infection Prevention Society (IPS), the European Society of Clinical Microbiology and Infectious Diseases (ESCMID), and the French Association for Standardization (AFNOR). He served as an associate editor of the Journal of Infection Prevention and the Journal of Epidemiology and Global Health. Dr Yezli is also the author/co-author of numerous peer-reviewed publications, book chapters, abstracts and invited oral presentations.



Panelist

Thuy Bich Hoang

Country Program Director

Wildlife Conservation Society
Viet Nam

Thuy Bich Hoang has a Master degree in Public Management and Economics. She is the director of the Wildlife Conservation Society (WCS)'s Viet Nam program, which is working on the implementation of the USAID EPT-PREDICT - a project that aims to prevent, detect, and rapidly respond to the spillover of novel infectious pathogens from wildlife to humans. Thuy has extensive experience working in partnership with local Government in the human and animal health sectors, including on the prevention of avian influenza and emerging pandemic threats, and wildlife farming and conservation. She is familiar with participatory and competence-based capacity building, behavior change communication interventions to promote more protective practices and mitigate zoonotic risks in human and animals, using these as public health evidence to empower enforcement officers including police, forest rangers, customs, and prosecutors to combat wildlife trafficking. Thuy had also worked with USAID EPT1-PREVENT where she has engaged with different ministries and local partners in Lao PDR, Cambodia and Viet Nam to institutionalize policy change e.g. monitoring biosecurity practices for market improvement and at captive breeding farms.

