



**PMAC** | PRINCE MAHIDOL  
AWARD CONFERENCE **2018**



## **PARALLEL SESSION 4.5**

**BRINGING SOLUTIONS INTO FOCUS: HARNESSING THE POWER OF AN  
ECONOMIC LENS**



## | BACKGROUND

Beyond the tragic loss of human life, the economic impact attributable to epidemics and pandemics can be catastrophic. SARS, \$30 billion; Pandemic H1N1: \$40 billion; Ebola: \$2.8 billion in the three West African economies alone. Recent estimates place the inclusive costs from a moderately severe influenza pandemic at \$570 billion annually, within the range projected for the annual cost associated with global climate change. And, without intervention, the cumulative economic impact from anti-microbial resistance (AMR) through 2050 is projected to exceed \$100 trillion (two-thirds of which is in low- and middle-income countries), substantially more than current annual global economic output.

Despite a repeated pattern of costly response, the economic case for investing in proactive, preventive measures targeting a reduction in the pressures that facilitate disease emergence has not been widely adopted. A yearly investment of \$1.9-3.4 billion to strengthen animal and human public health systems would yield a global public benefit estimated at over \$30 billion annually through avoided economic damages associated with pandemics. High return on investment is expected even if only a portion of pandemics are prevented, and strengthened One Health capacity in countries may confer additional benefits via improved prevention and control of endemic disease and AMR. However, challenges in mobilizing capital; an anemic evidence base and difficulty in translating evidence into policy advocacy with budget decision-makers; competing priorities for scarce health systems funding; and inequitable distribution of costs and benefits across sectors and stakeholders are all amongst the impediments to adopting the economic case for investing in preventive approaches.

Recent efforts designed to address these challenges have employed a range of approaches. Structures prioritizing risk avoidance and transference are being developed (e.g. multi-sectoral health security planning and capacity investments; epidemic/pandemic insurance structures). Also underway are new models capturing the economic impact of disease emergence as a function of land use, which will enable the disease regulatory role of ecosystems to be fairly valued and incorporated into payment for environmental services frameworks. And global financing structures promoting targeted, multi-sectoral systems strengthening and incentivizing investments in preparedness are being established.

## | OBJECTIVES

- Highlight successful practices and approaches that have demonstrated promise in fostering decision making informed by economic analyses;
- Profile structures with proven utility in transcending the identified challenges, including resource prioritization and inequitable sectoral cost and benefit distribution;
- Discuss approaches that strengthen the economic evidence base for investments in proactive, preventive disease mitigation approaches; and
- Review policy and regulatory options, such as tax and incentive structures, that can contribute to a favorable investment environment for more wide scale adoption of risk mitigation approaches



PRINCE MAHIDOL  
AWARD CONFERENCE

2018



Panelist

**Nita Madhav**

*Head of Data Science*

Metabiota

United States of America

Nita Madhav is the Head of Data Science at Metabiota, where she oversees the teams responsible for monitoring and modeling infectious disease spread and economic impacts. Ms. Madhav has over 12 years of experience in probabilistic modeling and risk assessment. The majority of her experience has focused on developing infectious disease risk, burden, and costing models to provide actionable insights to commercial and government entities. While at Metabiota, Ms. Madhav established the modeling group and has spearheaded the team's efforts to create the comprehensive library of modeled pathogens. Before joining Metabiota, Ms. Madhav worked as a Principal Scientist at AIR Worldwide, where she led the life and health research and modeling team. Prior to that, Ms. Madhav performed hantavirus research at the Special Pathogens Branch of the US Centers for Disease Control and Prevention. Ms. Madhav holds a BS in Ecology & Evolutionary Biology, with distinction, from Yale University and an MSPH in Epidemiology from the Rollins School of Public Health at Emory University.