

# ***Severe Influenza: Burden, Pathogenesis and Management***

**Monday 29<sup>th</sup> - Wednesday 31<sup>st</sup> October 2012, Hanoi**

## **Addendum to Programme and Abstract Book**

Final Programme

Additional Abstract and Biographies

Monday 29<sup>th</sup> October - Wednesday 31<sup>st</sup> October 2012, Hanoi

## Final Programme

### Monday 29<sup>th</sup> October

- 07:00 onwards Registration
- 09:00-09:20 Welcomes by Prof Nguyen Tran Hien (NIHE), Alan Hay (Chair AVG) and John Watson (Chair isirv)
- 09:20-09:40
- **Special Remarks** – *Assoc Prof Nguyen Thi Xuyen, Vice Minister of Health, Viet Nam*
- Symposium Session 1: Burden of Severe Influenza and SARI**  
Chairs: *Nguyen Tran Hien, Viet Nam & John Watson, UK*
- 09:40-10:00
- Incidence, Severity & Impact of Seasonal and Pandemic Influenza – summary of key conclusions from an isirv meeting, September 2012  
*John Watson, UK*
- 10:00-10:30
- **Keynote Lecture**  
Epidemiology and Impact of Severe Influenza and SARI: Asian Perspectives  
*Takeshi Kasai, Viet Nam*
- 10:30-11:10
- Overview on Influenza Vaccines  
*Lance Jennings, New Zealand & Nguyen Thu Van, Viet Nam*
- 11:10-11:30 Tea/Coffee
- 11:30-13:30
- Symposium Session 2: Influenza Pathogenesis and Acute Lung Injury**  
Chairs: *John Nicholls, HK, SAR China & Menno de Jong, The Netherlands*
- Immunopathology of Acute Lung Injury and ARDS  
*Malik Peiris, HK, SAR China*
  - Observations from Avian H5N1 Patients  
*Dong Thi Hoai-Tam, Viet Nam*
  - Mechanisms of Severe Pandemic 2009 H1N1 Illness  
*Peter Openshaw, UK*
  - Host Genetic Factors in Susceptibility and Severity  
*Peter Horby, Viet Nam*
  - Viral-Bacterial Interactions: Therapeutic Implications  
*Jane Deng, USA*
- 13:30-14:30 Lunch
- 14:30-16:00
- Concurrent Workshops 1**
- a. Influenza Antivirals – effectiveness, safety, novel agents, usage, national policies, guidelines  
Chairs: *Nahoko Shindo, Switzerland & Bin Cao, China*
- Nahoko Shindo* - Development of WHO Standard Guideline on Clinical Management of Influenza Virus Infection  
*Reiko Saito* - Clinical Effectiveness of Neuraminidase Inhibitors—Oseltamivir, Zanamivir, Laninamivir, and Peramivir — for Treatment of Influenza A(H3N2) and A(H1N1)pdm09 Infection  
*Jean-François Rossignol* - Nitazoxanide in the Treatment of Acute Uncomplicated Influenza  
*Gerrit Jan Weverling* - Human Monoclonal Antibodies to Prevent and Treat Influenza A and B, Including Infections by H5N1 Virus.  
*Donna Ambrosino* - Design of a Broadly Neutralizing Antibody Targeting Influenza  
*Celine Deffrasnes* - Modulating the Expression of Host Molecules Decreases H5N1 Replication

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**b.** Severe Influenza and SARI epidemiology – impact, surveillance, healthcare utilization, vaccines

Chairs: *Sylvie van der Werf, France & Mai Le, Viet Nam*

*Maciej Boni* - Understanding Influenza Dynamics Through Serial Seroepidemiology

*Ji Yun Noh* - Laboratory Surveillance on Influenza-like Illness at Emergency Department in Seven Teaching Hospitals, South Korea: 2011-2012

*Taro Kamigaki* - Estimates of Severe Acute Respiratory Infections Incidence in a City of the Philippines, 2009-2011

*Pham Quang Thai* - Effect of Climate on ILI Dynamics and Seasonality in Vietnam from 1991 To 2010

*Helen Green* - Severe Influenza Critical Care Surveillance: Insights into the Impact and Severity of the 2010/11 Influenza Season Relative to the 2009/10 Pandemic Season in England

16:00-16:30

Tea/Coffee

16:30-18:30

### Demonstrations

- WHO Training Materials on SARI Management  
*Nahoko Shindo, Switzerland, Paula Lister, UK & Janet Diaz, USA*
- National Surveillance Platforms in Viet Nam  
*Nguyen Tran Hien, Viet Nam*
- Neuraminidase Inhibitor Resistant and Sensitive Reference Viruses for Use in Susceptibility Testing  
*Aeron Hurt, Australia*
- *Analysis of Antiviral Resistance Data – IC50 determination and statistical analysis*  
*Larisa Gubareva, USA & Adam Meijer, The Netherlands*

19:30

Conference Dinner – Temple of Literature

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Tuesday 30<sup>th</sup> October

08:45-10:45

### Symposium Session 3: Advances in Clinical Management

Chair: *May Li Lim, Singapore & Arnold Monto, USA*

- New Developments in Influenza and Respiratory Pathogen Diagnostics  
*Christopher Wong, Singapore*
- Influenza Antiviral Effectiveness in Hospitalised Patients (Including Intravenous NAIs)  
*Norio Sugaya, Japan*
- Detection and Management of Antiviral Resistance Emergence  
*Guy Boivin, Canada*
- Adjunctive Therapies and Immunomodulatory Agents in SARI Management  
*David Hui, HK, SAR China*
- Ventilatory Strategies, Fluid Management and Supportive Care in ALI/ARDS  
*Andrew Luks*

10:45-11:15

Tea/Coffee

11:15-12:45

### Concurrent Workshops 2

- a. SARI Pathogenesis and Treatment – receptors, host responses, host-directed therapies, biologic response modifiers

Chairs: *Nelson Lee, HK, SAR China & Tim Uyeki, USA*

*Nelson Lee* - Pathogenesis of Severe Influenza: Virus, Host, and Virus-Host Interactions

*Eric Bortz* - Host RNA Binding Proteins Regulate Adaptation of H5N1 HPAI Polymerase to Human Cells

*Hassan Zaraket* - The Hemagglutinin Protein Acid Stability Regulates H5N1 Influenza Virus Pathogenicity and Host Adaptation

*Amabel Tan* - Immune Stimulants as Potential Agents Against Pandemic Influenza and Secondary Bacterial Infection

*Annette Fox* - Severe Pandemic H1N1 2009 Infection is Associated with Transient NK and T Deficiency and Abberant CD8 Responses

*Sarah Fardy* - Analysis of Inflammasome Related Molecules in the Response to H5N1 Avian Influenza

- b. Antiviral Resistance – surveillance/monitoring, mechanisms, assay development

Chairs: *Jenny McKimm-Breschkin, Australia & Philippe Buchy, Cambodia*

*Jenny McKimm-Breschkin* - Screening Neuraminidase Inhibitor Susceptibility of Avian Influenza Isolates from SE Asia 2005-2008 Identifies H5N1 I222 Mutants with Reduced Oseltamivir Sensitivity

*Philippe Buchy* - Cross-Neutralization Activity of Anti-H5N1 Specific Polyclonal Immunoglobulins Against Heterologous Strains of H5N1 Virus

*Angie Lackenby* - Classification of Neuraminidase Inhibitor Susceptibility for Surveillance

*Martin Schutten* - Treatment-Emergent Oseltamivir Resistance in Influenza A Viruses in the Influenza Resistance Information Study (IRIS) is Uncommon and Associated with Patient Age and Year of Enrolment

*Adam Meijer* - Oseltamivir-Resistant A(H1N1)pdm09 Influenza in Travelers Returning from Spain

*Mika Shigematsu* - What Will Influenza Surveillance Tell You About Antiviral Use and Resistance?

12:45-14.00

Lunch

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14:00-16:00

### Symposium Session 4: Meeting Clinical Challenges

Chairs: *Frederick Hayden, USA & Tim Uyeki, USA*

- Antiviral Studies and Viral Fitness in Animal Models of Influenza  
*Yoshihiro Kawaoka, USA*
- Influenza Encephalopathy and Related Neuropsychiatric Syndromes  
*Masashi Mizuguchi, Japan*
- Severe Influenza in Pregnancy: Mechanisms and Management  
*May Li Lim, Singapore*
- Influenza Prevention and Treatment in Transplant Recipients and Immunocompromised Hosts  
*Michael Ison, USA*
- Advances in Antivirals for Non-Influenza Respiratory Viruses  
*Frederick Hayden, USA*

16:00-17:00

isirv-AVG Annual General Meeting

17:00-19:00

Poster Reception

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Wednesday 31<sup>st</sup> October

08:30-10:15

### Concurrent Workshops 3

a. Clinical Issues – unusual syndromes, diagnostics, ventilatory strategies, clinical management, healthcare worker protection

Chairs: *David Hui, HK, SAR China, Andrew Luks, USA & Shigeru Saito, Japan*

*Shigeru Saito* - No Maternal Death Caused by Pandemic (H1N1) 2009 in Japan

*Cam Binh* - The Ethics of Research in Rapidly Evolving Infectious Disease Epidemics

*Toshihisa Ishikawa* - Rapid and Sensitive Detection of Highly Pathogenic H5N1 Influenza Virus by The SmartAmp Method

*Jiu-xin Qu* - Etiological Study of Community-Acquired Pneumonia Among Adolescents and Adults Patients With Low or Moderate Severity

*Shuqiao Yang* - Influenza Pneumonia: A Concurrent Comparison Between pH1N1 and H3N2 in the Post-Pandemic Period

*Steven Rockman* - Efficacy of a Single Dose of Intravenous Immunoglobulin to Prevent Pandemic Influenza

b. Consequences of Antiviral Resistance Mutations, Fitness, Animal Models

Chairs: *Jilong Chen, China & Elena Govorkova, USA*

*Jilong Chen* - Identification of Novel Host Factors Involved in Regulating Influenza Virus Infection and Replication

*Sylvie van der Werf* - Impact of Genetic Variations of the Neuraminidase of the H5N1 and Pandemic H1N1pdm09 Viruses on Their Enzymatic Activity and Sensitivity to Neuraminidase Inhibitors

*Aeron Hurt* - Using Ferrets to Assess the Fitness of the Oseltamivir-Resistant A(H1N1)pdm09 Viruses Responsible for a Cluster of Community Cases in Australia in 2011

*Erhard van der Vries* - H1N1 2009 Pandemic Influenza Virus: Resistance of the I223R Neuraminidase Mutant Explained by Kinetic and Structural Analysis

*Andres Pizzorno* - Evaluation of Pandemic Influenza A/H1N1 Virus Mutations Conferring Resistance to Zanamivir

*Tatiana Baranovich* - T-705 Suppresses Influenza A Virus Infectivity Via Lethal Mutagenesis

10:15-10:45

Tea/Coffee

10:45-13:00

### Symposium Session 5: Future Directions

Chairs: *Alan Hay, UK & Lance Jennings, New Zealand*

- Influenza Evolution: Can We Predict What's Next?  
*Jesse Bloom, USA*
- Antivirals in 2009 Pandemic – lessons and implications for future strategies  
*Maria Zambon, UK*
- Antiviral Combinations and Biotherapeutics for Influenza  
*Menno de Jong, The Netherlands*
- A Novel Corona Virus Causing Severe Respiratory Illness: An Early 10 Year Reunion of the SARS Club  
*Maria Zambon, UK*
- New Research Paradigms in Response to Emerging Infectious Threats  
*Jeremy Farrar, Viet Nam*
- Panel Discussion: Future Research Needs  
*Frederick Hayden (USA), Jesse Bloom (USA), Menno de Jong (The Netherlands), Jeremy Farrar (Viet Nam), Malik Peiris (HK, SAR China), Nahoko Shindo (Switzerland) & Maria Zambon (UK)*

13:00-13:15

Conclusions and Close of Meeting

13:15-14:00

Lunch

14:30 – 16.00

Tour of NIHE

**Monday 29th October**

**Symposium Session 1: Burden of Severe Influenza and SARI**

**Chairs: Nguyen Tran Hien & John Watson**

**Keynote Lecture**

**Epidemiology and Impact of Severe Influenza and SARI: Asian Perspectives**

**Takeshi Kasai – World Health Organisation, Hanoi, Viet Nam**

Asia has been facing a challenge on Emerging Infectious Diseases (EID) including avian influenza and it has been recognized as one of the risk factors to the fast-paced economic development. Countries in Asia have made progress in influenza control, particularly for pandemic preparedness, yet we still do not know much about seasonal influenza epidemiology and its burden in Asia. While influenza virus activity is well documented in developed countries and most of them have an influenza vaccination policy, developing countries particularly, in the tropics, do not have a policy yet. WHO Western Pacific Regional Office has developed a work plan to support countries in the region to prepare for these moments; moment of the pandemic and moment of the decision on seasonal influenza vaccination policy. The National Influenza Centre Meeting organized annually since 2006 devised five year plans. The first five year plan (2006-2010) focused on initiating and maintaining influenza like illness surveillance in all countries through strengthening its components such as laboratory diagnosis and sentinel hospital. At the end of the first five year plan, the attempt to develop a paper jointly to describe influenza epidemiology in the region revealed that it requires much more effort to understand influenza in the region. The second five year plan (2011-2016) expected to build on what has been achieved in the first five years, but decided to go further. Countries in the region started to collect information which is required when the vaccination policy will be discussed.



### Janet Diaz

Contra Costa Regional Hospital, Martinez, USA

Dr. Janet V. Diaz is a specialist in pulmonary and critical care medicine who received her post-graduate clinical and research training at the University of California San Francisco (UCSF). After fellowship, she spent a few years as an Assistant Professor of Medicine at San Francisco General Hospital (UCSF teaching hospital) providing care to the underserved population of the city, teaching student, residents and fellows, and serving as Medical Director of the medical ICU. In the latter role, she worked on projects to improve the quality of care delivered to the critically ill patient by improving systems, practice protocols and creating a culture of safety. During the influenza A (H1N1) pandemic 2009, Dr. Diaz started her work as a consultant for the WHO's Global Influenza Program and Integrated Management of Adolescent and Adult Illness (IMAI) program. She provides technical input for the development of training materials focused on the hospital management of the critically ill patient with severe ARI, presenting with pneumonia, septic shock and ARDS in resource-limited settings. She has led efforts to create an interactive, adult-learner friendly program that has now been delivered in Trinidad and Tobago and Bogor Indonesia (in collaboration with Ministry of Health and PERDICI-the Indonesian intensive care society). Currently, Dr. Diaz spends the remainder of her time in clinical practice at Contra Costa Regional Medical Centre in Martinez, California and continues her quality improvement work.



### Takeshi Kasai

World Health Organisation, Hanoi, Viet Nam

Dr. Takeshi Kasai, the newly appointed WHO's Representative to Viet Nam took up his post in Hanoi on 2nd April, 2012.

Dr. Kasai has extensive experience in public health and infectious disease, with responsibilities spanning programme planning, monitoring and evaluation, international collaboration, immunization policy and outbreak management.

Dr. Kasai first joined the WHO's Western Pacific Regional Office (WPRO) in Manila, Philippines in 2000 to work on the Stop TB programme. He went on to work in the area of infectious disease surveillance, response and control. Before coming to Viet Nam, Dr. Kasai was Director of the Division of Health Security and Emergencies at WHO/WPRO where his main responsibilities were to guide the development of strategic priorities, preparing the 37 countries and areas of the Western Pacific Region to avert or respond to an influenza pandemic and to oversee the implementation of the International Health Regulations (2005).

Prior to joining WHO, Dr. Kasai had a long career in Japan's Ministry of Health, Labor and Welfare as an infectious disease advisor during which he was noted for his contributions to the revision of the National Infectious Diseases Control Law, the National Immunization Law and the development of the National Surveillance System for Infectious Diseases.

Dr. Kasai holds a Medical Degree from Keio University School of Medicine in Japan as well as a Master of Public Health from the London School of Hygiene and Tropical Medicine in the United Kingdom. He is married with three children.



## **Paula Lister**

**Great Ormond Street Hospital, London, UK**

Dr Paula Lister is a consultant in paediatric and neonatal intensive care at Great Ormond Street Hospital, London, United Kingdom. She completed her MBBCh at the University of Witwatersrand South Africa in 1989, and moved to the UK. She became a member of the UK Royal College of physicians in 1996 and a Fellow of the Royal College Paediatrics and Child Health in 2006. She completed her PhD thesis in the role of the coagulation pathways in necrotizing enterocolitis in preterm neonates.

Over the last 5 years, Dr Lister has led on the development of the pandemic pan- Thames Paediatric Intensive Care contingency plan and she chairs the Paediatric Intensive Care Society Pandemic Influenza Preparedness subgroup. During the H1N1 pandemic, she was an advisor to the UK Department of Health Swine Flu Critical Care Group and NHS London and she became a clinical advisor to WHO on paediatric critical care during H1N1 pandemic.

Dr Lister has contributed to the development of a training program for WHO to improve the critical care provision for children in resource poor situations facing outbreaks of severe infectious respiratory disease. She is working with WFPICCS to develop and support a network of PIC clinicians for education, mutual aid and outbreak research.



## **Dong Thi Hoai Tam**

**University of Medicine and Pharmacy, Ho Chi Minh City, Viet Nam  
Clinical Consultant, Oxford University Clinical Research Unit, Ho Chi Minh City (HCMC)**

Dr Hoai Tam graduated as a Medical Doctor in 1980 and successfully completed a three-year internship training course, specializing in infectious diseases at the University of Medicine and Pharmacy HCMC. After that, she became a lecturer at the Department of Infectious Diseases, and also worked as a clinician at the Hospital for Tropical Diseases, a referral hospital for infectious and contagious diseases for

HCMC and the southern provinces of Vietnam. Dr Tam also took her Masters Degree in 1998, and a PhD Degree in medicine in 2004 at the University of Medicine and Pharmacy HCMC and became an Associate Professor in 2010.

As a clinician at the Intensive Care Unit of the Hospital for Tropical Diseases, she is responsible for a variety of duties including diagnosis and management of patients with severe infection.

For more than 15 years, Dr Tam has participated in many studies as a collaborator with researchers from the Oxford University Clinical Research Unit, HCMC in the field of tropical diseases such as malaria, bacterial meningitis, dengue, typhoid fever, HIV/AIDS. To date, she has had 27 scientific articles published (19 in Vietnamese and 8 in English journals), and tutored 9 post graduate thesis related to infectious and contagious diseases.



## Nguyen Thu Van

VABIOTECH, Hanoi, Viet Nam

Prof. Nguyen Thu Van is a virologist based at the National Institute of Hygiene and Epidemiology, Hanoi, Vietnam. Her research focuses on the development of a number of vaccines in Vietnam such as Hepatitis B recombinant, Hepatitis A, Rabies, Influenza, H. Influenzae vaccines. She has demonstrated her expertise in leading clinical trials, non-clinical evaluation of vaccines, design and development of new vaccines, tech-transfer of vaccine to Vietnam, managing international grants and coordinating multi-partner projects, vaccine production and quality control, collaborating with national immunization programmes to introduce the new vaccine to Vietnamese children. She was appointed as CEO of the Company for Vaccine and Biological Production No.1 (VABIOTECH) since 2000 and is also a Member of the National Council for Policy of Science and Technology in Vietnam since 2003.