

# Asian Focus Influenza

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Welcome to the 18th edition of *Influenza – Asian Focus*, the official newsletter of the Asia-Pacific Alliance for the Control of Influenza (APACI). Since its establishment in 2002, APACI has highlighted the impact of influenza in the Asia-Pacific region and offered guidance on disease control.

This issue of *Influenza – Asian Focus* presents highlights of the 5th meeting of the National Influenza Centres in the Western Pacific and South-East Asia regions, held in Laos. It also reports on key issues discussed at the 3rd Indonesian Influenza Foundation Symposium in Jakarta. Read our *Flu review* for a better understanding of healthcare workers' attitudes towards influenza vaccination, and keep up to date on influenza research with our recommended reading list and upcoming conferences to add to your calendar.



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## 5-year plan for national influenza surveillance

By A/Prof Lance C. Jennings



The World Health Organization (WHO) brings together annually National Influenza Centre (NIC) members from 23 countries in its Western Pacific and South-East Asia regions. The 2011 meeting was held in Laos to celebrate the Laos NIC becoming the newest member of the WHO's Global Influenza Surveillance and Response System.

The first objective of the meeting was to review current capacity in both regions and develop a 5-year plan (2012–2016) for national influenza surveillance. The plan's vision is to reduce morbidity and mortality associated with influenza in all NIC member states, which requires strengthening influenza surveillance, with a goal to inform influenza prevention and control strategies.

The meeting's second objective was to work on a regional review paper on seasonal influenza in member countries, an activity that clearly identified the non-

standardised presentation of virological and epidemiological surveillance data by different countries.

The final objective was to develop a region-specific research agenda based on the WHO Public Health Research Agenda for Influenza, and a plan for its implementation. With the regional 5-year plan focusing on prevention and control, the research and other activities needed to focus on establishing national vaccine policy throughout the region; for example, understanding the burden of disease, the targets for vaccination, and vaccine effectiveness.

This meeting has grown in all respects since the inaugural meeting in Melbourne in 2007. Clearly, there are opportunities for APACI to work with the WHO in understanding the burden of disease from influenza in individual countries and establishing prevention guidelines and influenza awareness education in the Asia-Pacific region.

APACI directors		New members (Sept 2011)	
Clinical Associate Professor Lance Jennings (Chair)	New Zealand	Dr Shelley de la Vega	Philippines
Professor Paul Chan (Vice-Chair)	Hong Kong SAR, China	Professor Anil Prasad	India
Clinical Professor David Smith	Australia	Professor Cissy Kartasmita	Indonesia

# Highlights of the 3rd Indonesian Influenza Foundation Symposium

The latest developments in the surveillance, diagnosis, therapy and prevention of the influenza virus in Asia-Pacific were discussed at the 3rd Indonesian Influenza Foundation Symposium in Jakarta. Following is a summary of the most pertinent aspects of these talks.

## Antiviral therapy for influenza: Therapeutic use and evolution

Prof David Smith discussed the current recommended antiviral agents available for the treatment and prevention of influenzas A and B. These include the neuraminidase inhibitors (NI) oseltamivir and zanamivir, which have been shown to reduce not only the duration of influenza illness but also viral shedding and complications, including pneumonia.

He presented data from several observational studies of oseltamivir for treatment of pandemic influenza A/H1N1 2009 (swine influenza), showing that when therapy was commenced within 2–4 days of onset, it reduced the duration of hospitalisation, ICU admission, mortality and viral shedding.

He noted that overall resistance to oseltamivir is very uncommon. Early trial and observational data found a resistance rate of 0.3%. However, in 2008, the seasonal A/H1N1 strain developed resistance to oseltamivir due to an H275Y mutation. This strain has now been replaced by the pandemic H1N1 2009 strain and once again resistance is rare.

Prof Smith also discussed NIs that have been developed and trialled recently. Firstly, peramivir, a long-lasting intravenous antiviral whose mode of action and efficacy are similar to oseltamivir, has cross-resistance due to the H275Y mutation, and secondly, laninamivir, a long-lasting multimeric form of zanamivir given as a single inhaled dose, appears to be effective against oseltamivir-resistant viruses. He commented that intravenous forms of oseltamivir and zanamivir may also be available in the future.

For optimal use of antiviral therapy for influenza, Prof Smith concluded that patients must be assessed early and a decision about treatment should be made ideally within 24 hours of onset.

## Influenza virus: From bench to bedside

Prof Paul Chan began by discussing the importance of a laboratory diagnosis of influenza. He emphasised the main factors that affect diagnostic yield of influenza for rapid laboratory diagnosis: a) the timing of specimen collection, which is related to the natural course of virus shedding that varies according to a patient's age and disease severity, and b) the nature of the specimen that can be collected. A balance between invasiveness to patient, safety and feasibility for healthcare workers (HCWs), and laboratory yield has to be achieved.

He went on to present data on the virological course of an influenza infection. During the 2009 H1N1 pandemic in Hong Kong, patients who had severe H1N1 were found to have significantly elevated levels of cytokines/chemokines when compared to mild cases. Drug resistance did not account for lack of response to treatment with oseltamivir; however, high concentrations of the virus were detected in the lower respiratory tract, with a longer shedding profile. He explained that these patients may require a higher dosage and longer duration of antiviral therapy.

Finally, Prof Chan discussed attitudes towards mandatory pandemic influenza vaccinations for HCWs in Hong Kong, and the low acceptance rate of the vaccine.

## Influenza vaccine: From seasonal to pandemic and post-pandemic

Challenges associated with egg-derived seasonal influenza vaccines include the fact that protection is antibody-mediated and strain specific, and is dependent on the match between the vaccine strains and the circulating influenza A and B viruses. Hence, A/Prof Lance Jennings emphasised that the development of vaccines that provide broader and longer-lasting protection is a high priority.

He noted that key issues highlighted during pandemic planning have been the timeliness of novel pandemic vaccine production and global supply. Although 52% of the world's population live in the South-East/Asia-Pacific, a region where influenza causes a similar burden to that of the rest of the world, inequitable distribution is inevitable with current vaccine manufacturing and supply strategies.

Even with the attention the H1N1 2009 pandemic has received, attitudes to influenza vaccination remain poor among both the general public and HCWs. Studies have shown that vaccine uptake is very much dependent on the suggestion of a primary healthcare provider. A/Prof Jennings added that a better understanding of the annual burden of influenza will be the key driver for the increased awareness of policymakers, the development of influenza vaccination guidelines, and improved vaccine uptake.

## Influenza in Indonesia: Current situation and the development of a National Influenza Centre

The National Institute of Health Research and Development acts as the National

Influenza Centre (NIC) and monitors the epidemiology and virology of the influenza virus circulating in Indonesia, in collaboration with 20 newly developed primary health centres across the country.

Dr Ondri Dwi Sampurno explained that, through this improved influenza-like-illness surveillance programme, Indonesia is able to monitor and report both influenza H5N1 and H1N1 cases throughout the country. At the end of April 2011, Indonesia had reported 177 cases and 146 fatalities from H5N1. The surveillance programme also allowed Indonesia to report 188 cases of H1N1, along with 1950 suspected cases and 10 fatalities, in 2009.

Strengthening the NIC's capacity and its network has involved multisector institutions, both nationally and internationally. These collaborations will allow the soon to be set up WHO Collaborating Centre for influenza in Indonesia to focus on the zoonotic aspect of the influenza virus.

### Optimising healthcare worker immunisation against influenza

Despite increasing awareness of the importance of influenza vaccination among HCWs, vaccination rates in most countries remain below 50%. Unvaccinated HCWs are at high risk of influenza infection from patients, and if infected themselves can transmit infection to their patients (the people they are caring for). The consequential loss of productivity through days off work has also been shown to have a substantial economic impact on healthcare systems.

Dr Mark Simmerman discussed a 4-year

Thailand study which ran from 2005 to 2009. In this study, HCWs in a medical intensive care unit (MICU) received information in the form of education, promotion of vaccination, screening for influenza among adult patients, and antiviral treatment of patients, while HCWs in a coronary intensive care unit and surgical intensive care unit did not. None of the HCWs in the MICU who received the intervention developed influenza.

However, Dr Simmerman added that education and vaccination campaigns alone may not change negative attitudes towards the influenza vaccination. Citing several healthcare institutions in the US that have made influenza vaccination mandatory on the basis of ethical responsibility and patient safety, he concluded that mandatory HCW vaccination policies build trust and credibility in the hospital or healthcare system by putting the patient's safety first.

### Influenza vaccination for Unilever employees

Because of the avian influenza H5N1 outbreaks since 1997 and the 2009 H1N1 pandemic, corporations in Indonesia were recommended to provide "anti-influenza" measures for all employees. In response, Unilever launched an influenza vaccination campaign, offering influenza vaccination to all staff.

Vaccination for employees has helped the company decrease absenteeism. According to Dr Sulistio, the rate of absenteeism due to both upper respiratory tract infection and influenza is continuously declining at Unilever, which benefits both the employer and the employee.

## Recommended reading

#### Increased detection in Australia and Singapore of a novel influenza A (H1N1) 2009 variant with reduced oseltamivir and zanamivir sensitivity due to a S247N neuraminidase mutation

A novel influenza variant with reduced oseltamivir and zanamivir resistance has been detected in both Singapore and Australia. The variant contains an S247N neuraminidase mutation and when combined with the H275Y mutation the dual mutant has very high oseltamivir resistance.

Hurt AC *et al. Euro Surveill* 2011; 16.

#### Perceptions of and willingness to engage in public health precautions to prevent 2009 H1N1 influenza transmission

Individuals' willingness to comply with public health recommendations with regard to the 2009 H1N1 pandemic, and factors predicting willingness were examined in this paper. Read about how an individual's varying interpretations should be considered in crafting public health messages.

Kiviniemi MT *et al. BMC Public Health* 2011; 11: 152.

#### Effectiveness of seasonal vaccine in preventing confirmed influenza-associated hospitalizations in community dwelling older adults

Current evidence supporting the effectiveness of influenza vaccine in preventing hospitalisations in older adults is insufficient. This paper presents results from a study assessing the efficacy of the seasonal vaccine in preventing hospitalisation in a population of adults aged  $\geq 50$  years over a 3-year period.

Talbot HK *et al. J Infect Dis* 2011; 203: 500-8.

#### The impact of pandemic influenza H1N1 on health-related quality of life: a prospective population-based study

This paper estimates the overall disease burden, measured in quality-adjusted life years (QALY), of the 2009 H1N1 pandemic in England. Although the QALY was minor for individual patients, the estimated total burden of influenza over the H1N1 pandemic was found to be substantial when compared to other infectious diseases.

Van Hoek AJ *et al. PLoS One* 2011; 6: e17030.



## APACI: looking ahead

The APACI annual meeting was held on 20 May 2011 in Jakarta, Indonesia. In the coming year, APACI aims to be the lead organisation in the region, with foundations in every area of the Asia-Pacific.

APACI plans to raise awareness of influenza, its impact on the region, and mechanisms for controlling it. APACI will also seek to identify the burden of disease in the Asia-Pacific.

On an organisational level, APACI will endeavour to provide best practice guidelines for the use of antivirals and vaccines and also look to provide funding for young researchers to review regional best practices.

## Flu review

Studies have shown that the vaccination of healthcare workers (HCWs) can reduce the mortality rate of patients, especially in long-term care settings.<sup>1</sup> Even so, at the height of the H1N1 pandemic, when the WHO influenza pandemic alert was at phase 5, the willingness of HCWs in a hospital in Hong Kong to accept the pre-pandemic H1N1 vaccine was only 47.9%.<sup>2</sup>

Studies have cited vaccine safety as one of the main concerns for HCWs.<sup>3</sup> While some healthcare institutions in the US have made vaccination mandatory among their staff, surveys show that this is opposed by HCWs as they believe it is a violation of freedom of choice and personal autonomy.<sup>4</sup>

Healthcare organisations running vaccination campaigns should emphasise the benefits of vaccination to the HCW, such as protecting themselves from getting sick (personal benefit) and protecting patients from influenza (patient benefit).<sup>4</sup> Successful HCW vaccination campaigns also have to ensure that vaccinations are easily accessible and at the convenience of staff.<sup>5</sup>

### References

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4. Hakim H, Gaur AH, McCullers JA. Motivating factors for high rates of influenza vaccination among healthcare workers. *Vaccine* 2011; 29: 5963–9.
5. Abu-Gharbieh E, Fahmy S, Rasool BA, Khan S. Influenza vaccination: healthcare workers attitude in three Middle East countries. *Int J Med Sci* 2010; 7: 319–25.

## Upcoming meetings

### International

#### 49th Annual Meeting of the Infectious Diseases Society of America and the HIV Medicine Association

Boston, USA  
20–23 October 2011  
<http://www.idsa2011.org/>

#### Influenza Congress USA 2011

Arlington, USA  
8–10 November 2011  
<http://www.terrapinn.com/2011/influenza-congress-usa/>

#### EPIDEMICS<sup>3</sup> – 3rd International Conference on Infectious Disease Dynamics

Boston, USA  
29 November–2 December 2011  
<http://www.epidemics.elsevier.com/>

### World Influenza Congress Europe

Vienna, Austria  
6–8 December 2011  
<http://www.terrapinn.com/2011/flu/>

### Regional

#### 7th Australian Influenza Symposium

Melbourne, Australia  
6–7 October 2011  
<http://www.influenzaspecialistgroup.org.au/conferences/meetings/other-meetings>

#### 7th Congress of the World Society for Pediatric Infectious Diseases

Melbourne, Australia  
16–19 November 2011  
<http://www2.kenes.com/wspid/Pages/home.aspx>

## Next APACI meeting

APACI will hold its next meeting at the Australian Influenza Symposium in Melbourne on 6–7 October 2011. If you wish to contribute to the next edition of *Influenza – Asian Focus*, please contact Kim Sampson at [kim@isg.org.au](mailto:kim@isg.org.au).

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