



<b>Title</b>	<b>Behavioural changes in relation to risk perception and prevention of avian and human influenza in the general population of Hong Kong, 2006 to 2010</b>
<b>Author(s)</b>	<b>Liao, Q; Cowling, B; Lam, WWT; Fielding, R</b>
<b>Citation</b>	<b>The 2014 Health Research Symposium, Hong Kong, 15 November 2014. In Programme Book, 2014, p. 49, abstract no. P84-Ab0047</b>
<b>Issued Date</b>	<b>2014</b>
<b>URL</b>	<b><a href="http://hdl.handle.net/10722/208370">http://hdl.handle.net/10722/208370</a></b>
<b>Rights</b>	<b>Creative Commons: Attribution 3.0 Hong Kong License</b>

**Conclusions:** The lack of substantial change in preventive measures or knowledge about the modes of H1N1 transmission in the general population suggests that community mitigation measures played little role in mitigating the impact of the first wave of 2009 influenza A(H1N1) pandemic in Hong Kong.

Ref. No.: PHE-1&10 (HKU)

## P84-Ab0047

### Behavioural Changes in Relation to Risk Perception and Prevention of Avian and Human Influenza in the General Population of Hong Kong, 2006 to 2010

Qiuyan Liao, Benjamin Cowling, Wendy WT Lam, Richard Fielding  
*The University of Hong Kong, Hong Kong*

**Background:** The Hong Kong government has introduced a series of progressive measures on importation, farming and retail of live poultry to minimize risk of A/H5N1 transmission since 1997. Perceived risk of A/H5N1 and related preventions could decline as these macro-level policies minimizing human-chicken contact. This may paradoxically increase population risk of other influenza and respiratory infection due to reduced preventive behaviors.

**Objectives:** A follow-up survey in 2010 was conducted to investigate change of live poultry exposure, risk perception and prevention of A/H5N1 among respondents who participated in the random household telephone survey in 2006.

**Methods:** Totally, of 1,760 respondents who completed the 2006 survey, 680 could be traced and 461 (68%, 461/680) agreed and completed the repeated telephone survey between July and August 2010. Prevalence of buying and touching, perceived risk of A/H5N1, worry, and protective hygiene practices were compared between 2006 and 2010 using descriptive analysis. How changes of these variables differed by respondents' demographics and change of perceived risk and worry led to change of buying and practices of hygiene were further explored by multivariate logistic regression analyses.

**Results:** Prevalence of household buying live poultry declined from 73% in 2006 to 41% in 2010. Buying household bought on averaged 11.4 chicken/household/year in 2010 versus 14.4 in 2006 while touch rate remained unchanged (5%). Overall exposure (touch rate × purchase rate) declined by 21% from 2006 to 2010 (0.72 vs. 0.57 exposure/household/year). Most personal hygiene practices improved from 2006 to 2010 except that frequency of daily hand-washing and covering mouth when sneezing and coughing declined. Male respondents reported less likely to cover mouth when sneezing or coughing (OR=1.60, 95%CI: 1.00-2.56) while immigrants were more likely to report reduced frequency of daily hand-washing (OR=1.58, 95%CI: 1.04-2.41). Perceived risk from buying live poultry and worry about contacting A/H5N1 declined from 2006 to 2010. Younger respondents were more likely to report declined worry and risk from buying live poultry. Declined worry was associated with less hygiene practices (OR=1.61, 95%CI: 1.04-2.47).

**Conclusions:** The decline in buying prevalence may be attributed to limiting poultry availability. However, among buyers, prevalence of touching poultry remained unchanged, suggesting little effect from public health promotion to change purchasing-related behaviours. Perceived risk from buying, A/H5N1 worry and some hygiene practices declined, suggesting that risk of contracting human influenza viruses could increase. Young males and immigrants should be the major target for public health education to promote hygiene practices.

Ref. No.: 09080732

## P85-Ab0050

### Mass Spectrometrical Identification of Host Cell Surface Protein Receptor(s) for Human Norovirus in Primary Human Duodenal Tissues

Martin C.W. Chan

*The Chinese University of Hong Kong, Hong Kong*

**Introduction:** Human noroviruses (NoVs), a member of the family Caliciviridae in the genus Norovirus, is the leading cause of acute non-bacterial gastroenteritis worldwide which affects all age groups in both developed and developing countries. Our understanding on the pathogenesis of NoV has been severely hampered by the lack of a robust in vitro cell culture system and small animal model for NoV. We believe identifying candidate host cellular receptor(s)/co-receptor(s) for NoV may provide important data to the direction of developing an in vitro cell culture system. Laboratory investigations of natural NoV infections and volunteer challenge studies have demonstrated NoV-associated histopathological changes in human small intestines. However, direct evidence showing viral antigens in infected intestinal epithelial cells has been lacking. This raises the concern whether NoV infects enterocytes.

**Methods:** In this study, we first used in vitro whole-virus binding assay to study NoV tissue tropism. Total protein lysate of human duodenal biopsy specimens were then subjected to virus overlay protein binding assay (VOPBA) and mass spectrometry to identify candidate host cellular receptor(s)/co-receptor(s).

#### Results:

1. Using in vitro whole-virus binding assay, human norovirus genogroup II genotype 4 (NoV GII.4) Sakai strain was found to bind to human duodenal lamina propria and Brunner's glands.
2. Using virus overlay protein binding assay (VOPBA) and mass spectrometry on total protein lysate of human duodenal biopsy specimens, nucleolar protein 8 (NOL8) was identified as a candidate host cellular protein receptor/co-receptor for NoV GII.4 Sakai strain.
3. NoV may target intestinal non-epithelial cells.

**Conclusions:** We provide evidence that NoV GII.4 Sakai strain showed in vitro binding pattern to duodenal lamina propria and Brunner's glands, but not to epithelial enterocytes. NoV may target intestinal non-epithelial cells. NOL8 may be a candidate cellular receptor/co-receptor for NoV and deserves further investigations.

Ref. No.: CU-09-02-05

## P86-Ab0052

### Identification of Hepatitis B Virus DNA Polymerase Sequences to Predict Virological Response to Entecavir Therapy

Danny Wong<sup>1</sup>, Malgorzata Kopaniszen<sup>1</sup>, Katsumi Omagari<sup>2</sup>, Yasuhito Tanaka<sup>2</sup>, Daniel Fong<sup>1</sup>, Wai-Kay Seto<sup>1</sup>, James Fung<sup>1</sup>, Fung-Yu Huang<sup>1</sup>, An-ye Zhang<sup>1</sup>, Ivan Hung<sup>1</sup>, Ching-Lung Lai<sup>1</sup>, Man-Fung Yuen<sup>1</sup>

<sup>1</sup>The University of Hong Kong, Hong Kong, <sup>2</sup>Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan

**Background and Aims:** Entecavir is a potent antiviral agent that often reduces hepatitis B virus (HBV) DNA to an undetectable level after one year of treatment, but HBV DNA may remain detectable in some patients. We aimed to determine whether baseline HBV reverse transcriptase (rt) sequence polymorphism