衞生防護中心
Centre for Health Protection
保障市民健康
Protecting Hong Kong's health
Department of Health
Hong Kong SAR

COMMUNICABLE DISEASES ....WATCH

Feature:

Mumps infection – review of epidemiological features of reported cases from 2005 to 2010

Journal Publication Highlights

LENS ON CHP

Above: Exercise Jasper, a cross-boundary public health exercise conducted by the CHP and Shenzhen Entry-Exit Inspection and Quarantine Bureau at Shenzhen Bay Port on May 9, 2011.

NEWS

An imported case of listeriosis

On April 27, 2011, the Centre for Health Protection (CHP) recorded an imported case of listeriosis affecting a 35-year-old pregnant woman. She was in 35th week of gestation when she first presented with fever on April 8 in Beijing. She was diagnosed to have listeriosis and received treatment in Beijing. She travelled to Hong Kong on April 20. The patient had fever again on April 21 and was admitted to a private hospital the next day with emergency caesarean section done. Intrauterine and placental swabs yielded *Listeria monocytogenes* on April 24. Her condition was stable all along and she was discharged on April 27. Her baby was not infected. Her other home contacts were also asymptomatic.

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Mumps infection – review of epidemiological features of reported cases from 2005 to 2010

Reported by ANNA OK WONG, Scientific Officer, DR ALLEN CHAN, Senior Medical Officer, Vaccine Preventable Disease Office, Surveillance and Epidemiology Branch, CHP.

Mumps has been made a notifiable disease since March 1994. From 1994 to 2002, the yearly number of notification ranged from 25 to 89. Since January 1, 2003, a new case definition for mumps has been adopted in Department of Health's Infectious Disease Registry, taking reference from the case definition published by the World Health Organization (WHO). In the new case definition, a "clinical" case of mumps is defined as an illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting greater than or equal to 2 days, and without other apparent causes. An important difference between the new case definition and the old (pre-2003) is that fever is no longer required as a criterion for a "clinical" case. It has been reported in an earlier issue of CD Watch published in 2004 that the revised case definition might have contributed to an apparent increase of mumps cases in 2003-2004, when a monthly of 6 -18 cases were recorded. Here we reviewed the trends and epidemiological features of cases recorded since 2005.

During 2005 to 2010, a total of 967 cases were recorded and the annual number ranged from 136 to 184 (Figure 1). The monthly number of cases ranged from 2 to 25 with no obvious seasonality. Most of the cases did not submit clinical specimen and could not be confirmed by

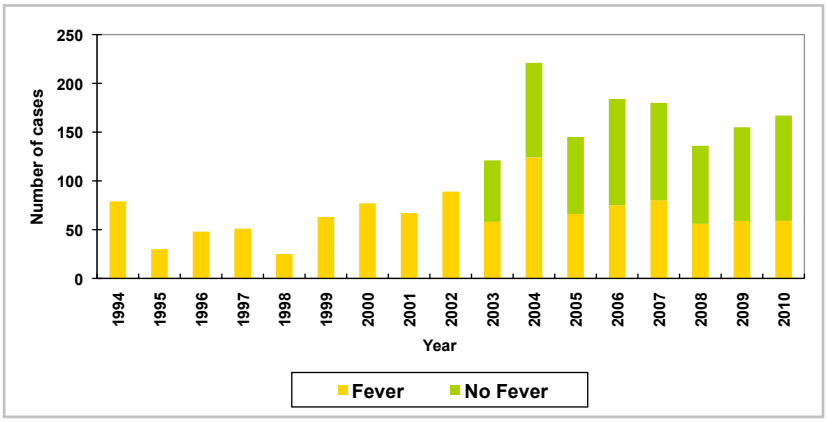

Figure 1 - Annual number of mumps recorded by proportion of cases with fever (1994-2010).

laboratory tests. The number of laboratory confirmed cases accounted for only 2% - 10% of total number of cases recorded per year from 2005 to 2010.

These cases affected 620 males and 347 females (male-to-female ratio 1.8:1), whose ages ranged from 6 months to 90 years (median = 9 years). More than half of the cases were observed in children aged 10 years or below (Figure 2). Apart from swelling of salivary glands, other symptoms presented including cough (19%), runny nose (17%), headache (11%) and myalgia (6%) were less common. Similar to that observed in 2003-2004, more than half of the cases (572 cases, 59%) did not have fever. A small proportion of cases (43/967, 4%) required hospitalisation. Four (0.4%) developed orchitis as complications and all occurred in adult patients, with ages ranged from 28 to 49 years. No fatal case was recorded so far.

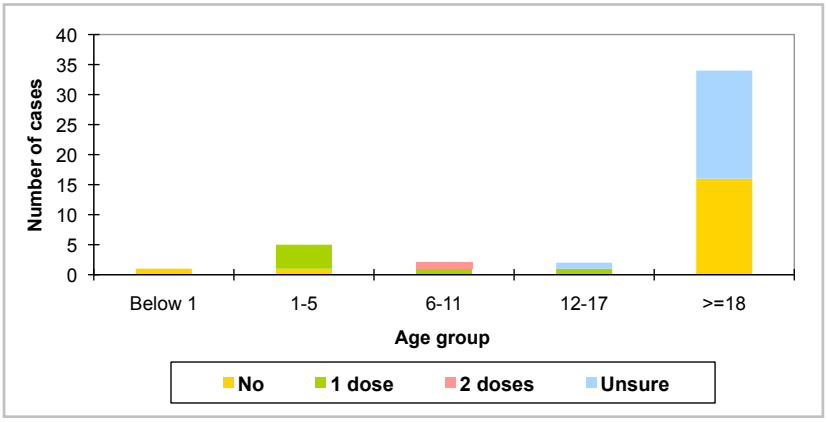

Figure 2 - History of vaccination with mumps-containing vaccine of the 44 laboratory-confirmed cases by their age.

Most cases (955 cases, 99%) were sporadic infection without epidemiological linkage. Five small clusters were identified (cluster size ranged from 2 to 3 persons with a median of 2 persons). Three clusters occurred in home settings, while the remaining 2 in a kindergarten (2 persons) and secondary school (3 persons) respectively. There were 46 imported cases which were mainly from Mainland China (32 cases), followed by United Kingdom, Indonesia and Nepal (3 each), Philippines (2 each), United States, Japan and Botswana (1 each).

For the 44 laboratory confirmed cases, most of them reported no history of mumps vaccination or with unknown vaccination status. For the 34 adults cases who were born before the introduction of the combined measles-mumps-rubella vaccine in 1990, all were either did not received mumps-containing vaccine (16 cases) or unsure their vaccination status (18 cases). For those who were born after 1990, most of them either had not completed the recommended two-dose schedule of mumps-containing vaccine (8 cases) or was uncertain about the vaccination history (1 case).

In conclusion, the trend of mumps has been relatively stable since 2005. As only a small proportion of the cases were laboratory confirmed, medical practitioners are urged to collect specimen for proper diagnosis. Vaccination is an effective means for prevention of mumps. The WHO recommends a two-dose schedule of mumps vaccine in order to provide long-term protection which is included in the Childhood Immunization Programme in Hong Kong. To prevent mumps, members of public are reminded to have up-to-date vaccination and maintain good personal and environmental hygiene.

(...cont'd)

An imported case of Q fever

On April 26, 2011, CHP recorded an imported case of Q fever affecting a 63-year-old man. He lived in Guangdong Province and came to Hong Kong on March 13. He presented with fever, malaise, joint pain and skin rash since March 24. He was admitted to a public hospital on April 1 and found to have mild deranged liver function. He was treated with doxycycline and discharged in stable condition on April 15. Paired sera for Phase 2 *Coxiella burnetii* polyvalent IFA taken on day 11 and day 20 of onset of symptoms showed four-fold rise on April 26. He did not recall history of intake of high risk food or contact with animals during the incubation period. His home contacts were asymptomatic.

Exercise Jasper

A cross-boundary public health exercise, code-named Jasper, was conducted by the CHP and Shenzhen Entry-Exit Inspection and Quarantine Bureau (SZCIQ) at Shenzhen Bay Port on May 9, 2011, ahead of the 26th Shenzhen Summer Universiade in August, to enhance communication and coordination between Hong Kong and Shenzhen in the event of a public health incident.

The morning exercise comprised two parts, the first being conducted in Shenzhen while the second took place in Hong Kong, involving the participation of the Customs and Excise Department, Fire Services Department, Immigration Department, Hong Kong Police Force and the Hong Kong Shenzhen Bay Port Facility Management Office. The exercise aimed to test the response of the two sides in the event of an infectious disease outbreak during the Universiade period. About 130 participants from Government departments and organisations from Hong Kong and Shenzhen took part in the exercise, and observed by about 200 experts from Hong Kong, Mainland and Macao health authorities.

Journal Publication highlights by CHP

Evolution of the haemagglutinin gene of the influenza A(H1N1)2009 virus isolated in Hong Kong, 2009-2011

GC Mak, CK Leung, KC Cheng, KY Wong, W Lim

Virology Division, Public Health Laboratory Services Branch, Centre for Health Protection, Department of Health, Hong Kong SAR, China

This study described the temporal sequence changes in the haemagglutinin (HA) gene of the influenza A(H1N1)2009 virus isolated in Hong Kong from 2009 to 2011. The authors analysed 338 full HA sequences of influenza viruses isolated from respiratory samples obtained from 40 public and private hospitals and clinics in Hong Kong from June 2009 to January 2011. Results showed that the influenza A(H1N1)2009 viruses collected in Hong Kong clustered into two main branches characterised by the E391K and E391E amino acids. During the period from July 2009 to February 2010, the proportion of E391E viruses fluctuated between 8% and 98%, and was gradually displaced by the evolving E391K viruses. The main branch E391K evolved in two sub-branches with N142D and S202T mutations that first appeared in March and July 2010, respectively. The sub-branch S202T displaced the isolates with N142D in September 2010 and became the predominant strain in the traditional winter influenza season in January 2011. All these emerging genetic variants display similar antigenic characteristics when assessed by haemagglutination inhibition assay using A/California/07/2009 ferret antisera. The authors concluded that in addition to laboratory surveillance to monitor any emerging antigenic variants, concurrent genetic surveillance would facilitate early detection of antigenic sites that are selected for the virus to escape immunological restraint.

Euro Surveill 2011 16(9): pii=19807
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19807

A school outbreak of pandemic (H1N1) 2009 infection: assessment of secondary household transmission and the protective role of oseltamivir

YH Leung, MP Li and SK Chuang

Field Epidemiology Training Programme, Centre for Health Protection, Department of Health, Hong Kong SAR, China

In this study, the authors described the epidemiological features of an outbreak of pandemic (H1N1) 2009 (pH1N1) infection occurred at a secondary school in Hong Kong during mid-June 2009. The extent of secondary household transmission and the protective role of oseltamivir in household contacts were also examined. Out of 511 students in the school, sixty-five students with a median age of 14 years (range 12-18 years) were affected, corresponding to an attack rate of 12.7% (65/511). Of the 205 household contacts identified, 12 persons from eight households were confirmed as having pH1N1 infection. The estimated secondary household attack rate (SAR) was 5.9% (12/205, 95% CI 2.7 – 9.1), and the estimated mean household serial interval (MSI) for pH1N1 virus was 2.8 days (range 2-4 days, 95% CI 2.1-3.4 days). The SAR in household contacts aged <18 years (23.1%) was higher than those who aged ≥18 years (1.8%; OR 16.3, 95%CI 3.7–81.3). The SAR was 0% in the 64 household contacts who had received oseltamivir prophylaxis compared to 8.5% (12/141) in those who had not (OR 0, 95% CI 0 - 0.9). The authors concluded that household contacts below 18 years were more likely to be infected than older contacts and that oseltamivir prophylaxis seemed to be effective in preventing secondary infection in household settings.

Epidemiol Infect. 2011 Jan;139(1):41-4. Epub 2010 Jun 21.
http://www.ncbi.nlm.nih.gov/pubmed/20561390

Estimation of the basic reproduction number of enterovirus 71 and Cosackievirus A16 in hand, foot, and mouth disease outbreaks

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Surveillance and Epidemiology Branch, Centre for Health Protection, Department of Health, Hong Kong SAR, China

Enterovirus 71 (EV71) and coxsackievirus A16 (Cox A16) are common pathogens causing hand, foot, and mouth disease (HFMD) in pediatric populations. In this study, the authors used a mathematical model to estimate the basic reproductive number (R_0) of EV71 and Cox A16 infection in HFMD outbreaks in Hong Kong during the period 2004-2009. 34 HFMD outbreaks, 27 caused by Cox A16 and 7 caused by EV71 were analyzed. The estimation for R_0 was based on the cumulative number of cases at the initial growth phase of the outbreaks, as determined by the epidemic curves. The median R_0 of EV71 was estimated to be 5.48, more than double of that (2.50) of Cox A16, indicating EV71 appears to be more infectious and affect more children at the beginning of these outbreaks. The R_0 estimated was not associated with outbreak settings, sizes of the institutions and number of persons affected. These findings help better understand the transmission dynamics of HFMD outbreaks and formulate public health measures for controlling the disease.

Pediatr Infect Dis J. 2011 Feb 14. [Epub ahead of print]
http://www.ncbi.nlm.nih.gov/pubmed/21326133

Promotion of seasonal influenza vaccination among staff in residential care homes for elderly in Hong Kong

H Chen[1], S Ng[2], ME King[3], C Fong[1], WP Ng[1], KH Szeto[1], S Ho[1], J Leung[1], CK Lam[2], S Chan[2], WM Chan[2], TY Wong[1]

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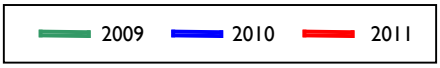
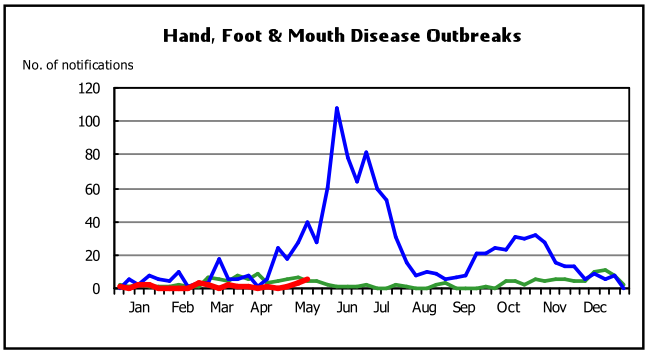
[3] Faculty of Education, The University of Hong Kong

To increase uptake of influenza vaccination among RCHE staff in HK, the authors developed and evaluated a multimodal vaccine promotion program (VPP) based on identified factors affecting vaccination acceptance or refusal within the HK Chinese context. This study adopted a sequential three-phase design: (1) Six focus group interviews to explore factors affecting the acceptance or refusal of vaccination among staff of RCHEs. The results revealed that RCHE staff's belief in the efficacy and safety of the vaccine and misconceptions about the vaccine played an important role in vaccine acceptance. (2) Based on these findings, a four-component VPP was designed to address the major concerns held by RCHE staff, ameliorate their misconceptions, and improve knowledge of vaccines in general. (3) Later, the authors evaluated the effectiveness of the VPP with a two-arm cluster randomized controlled trial among RCHEs with staff vaccination rates below 50%. Compared with 2008/2009, the actual mean staff vaccination rates in 2009/2010 increased significantly in both the intervention (from 39.4% to 59.6%; $P < 0.001$) and control groups (from 36.3% to 47.6%; $P = 0.008$) while the overall staff vaccination rates in local RCHEs remained stable. Staff from RCHEs in the intervention group had a higher vaccination rate than the control group (59.6% versus 47.6%, $P = 0.072$) which was marginally statistically significant. The authors highlighted the the importance of a comprehensive and culturally sensitive approach to promote influenza vaccination for RCHE staff.

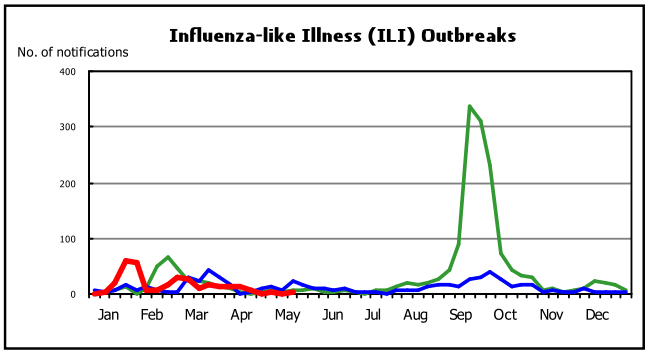
Healthcare Infection 2010 15: 121-125
http://www.publish.csiro.au/paper/HI10023.htm

SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEK 19 - WEEK 20)

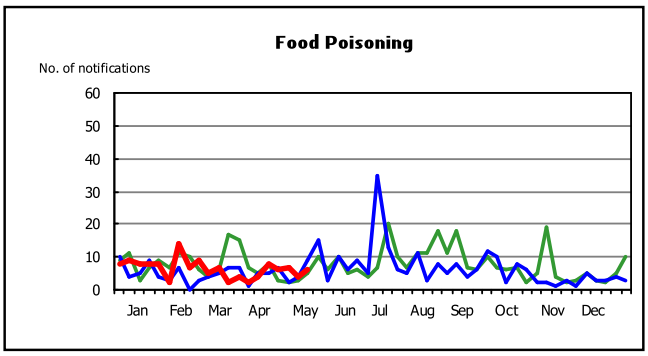




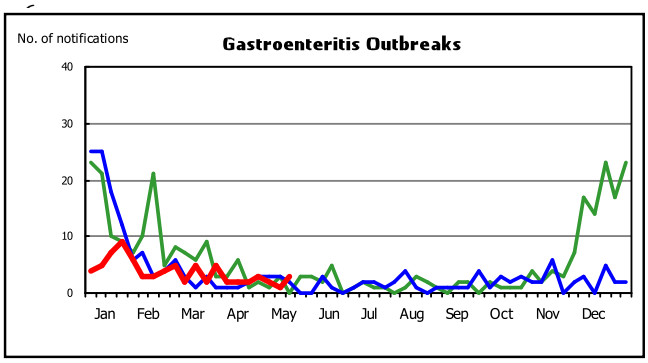
Week 17:	0	**Week 19:**	**3**
Week 18:	1	**Week 20:**	**5**



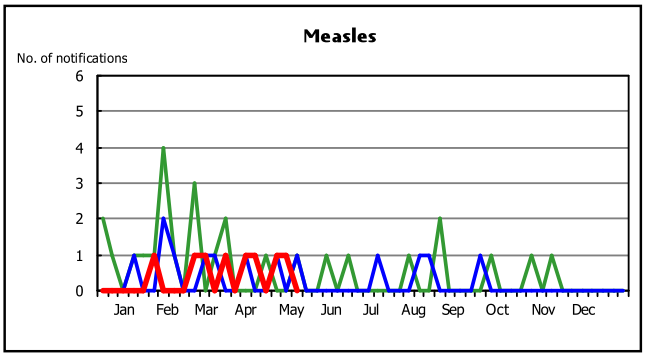
Week 17:	1	**Week 19:**	**1**
Week 18:	2	**Week 20:**	**3**



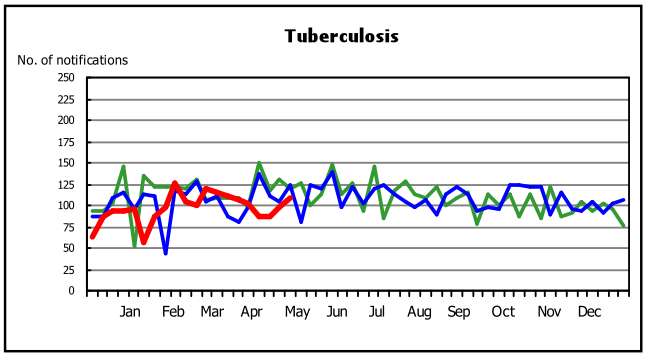
Week 17:	6	**Week 19:**	**4**
Week 18:	7	**Week 20:**	**6**



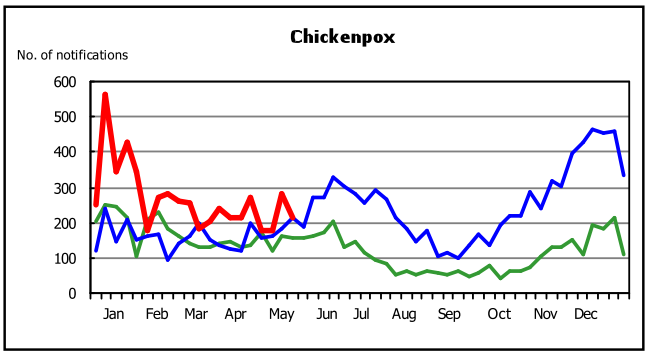
Week 17:	3	**Week 19:**	**1**
Week 18:	2	**Week 20:**	**3**



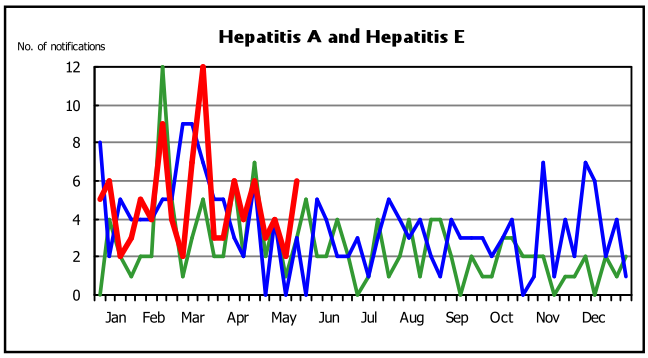
Week 17:	0	**Week 19:**	**1**
Week 18:	1	**Week 20:**	**0**



Week 17:	87	**Week 19:**	**98**
Week 18:	88	**Week 20:**	**108**



Week 17:	177	**Week 19:**	**281**
Week 18:	177	**Week 20:**	**213**



Week 17:	3	**Week 19:**	**2**
Week 18:	4	**Week 20:**	**6**

Data contained within this bulletin is based on information recorded by the Central Notification Office (CENO) and Public Health Information System (PHIS) up until May 14, 2011. This information may be updated over time and should therefore be regarded as provisional only.