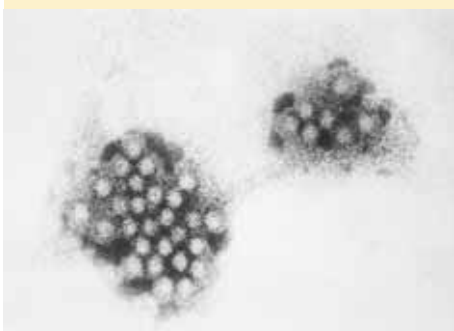




**Features:**  
*Fusarium* keratitis  
 Norovirus outbreaks

**LENS ON CHP**



Above: An electron micrograph of the norovirus (Source: CDC/ Public Health Image Library, CDC, US).

**NEWS**

**Suspected human avian flu case in Shenzhen**

On June 13, 2006, CHP received notification of a suspected human avian flu case in Shenzhen from the Health Department of Guangdong Province and Ministry of Health, China. Preliminary tests done in Shenzhen CDC and Guangdong Provincial CDC revealed influenza A H5 subtype. The patient is a 31-year-old worker, presented with fever and pneumonia on June 3 and was admitted to a local hospital. He remains in critical condition. The patient had history of visiting wet market with live poultry a few times before onset of symptoms. He and his family also consumed a slaughtered chicken from a local wet market. CHP will liaise closely with its Guangdong counterpart to obtain the latest information and will

(continued on page 46)

**Epidemiology of *Fusarium* keratitis in Hong Kong**

**Reported by DR EDMOND MA, Medical Officer, Field Epidemiology Training Programme & DR KELLIE SO, Senior Medical Officer, Surveillance and Epidemiology Branch, CHP.**

*Fusarium keratitis* is a fungal infection of the cornea. *Fusarium* is commonly found in organic matter such as soil and plants. People who have trauma to the eye, certain eye diseases and problems with their immune system may be at increased risk for this type of infection. Contact lens related *Fusarium* keratitis was rarely reported in Hong Kong. An increased number of contact lens related *Fusarium* keratitis cases have been reported recently in Hong Kong, Singapore, and the United States (US). This article reports the local epidemiology.

Since the heightened awareness of *Fusarium* keratitis, the Centre for Health Protection (CHP) has been investigating reports of *Fusarium* keratitis and 33 confirmed cases were recorded from January 2005 to the end of May 2006. These cases were actively identified from in-patient discharge diagnosis data and electronic laboratory records of all public hospitals, and reports from both public and private ophthalmologists. The month of admission/consultation of these patients is shown in Figure 1.

In this series, there were between one to five cases of *Fusarium* keratitis each month from May 2005 to April 2006. Sixty-four percent (21/33) were females, with age ranged from 16 to 51 years (mean:

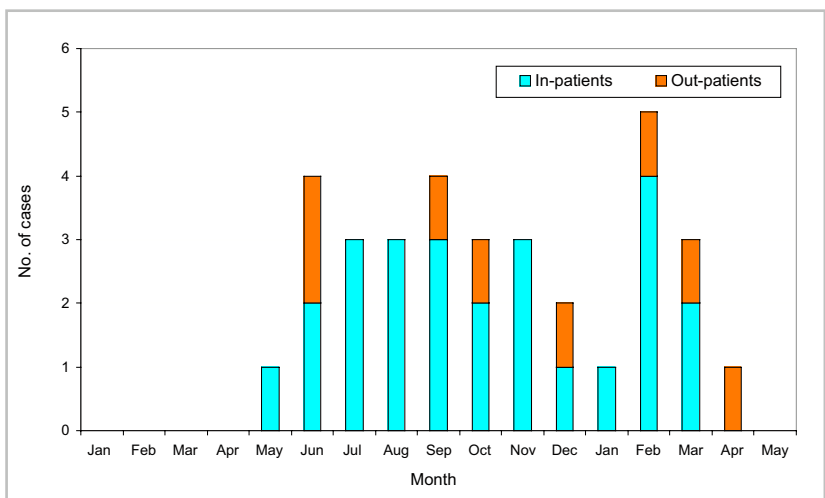


Figure 1 - Monthly breakdown of hospital admission/consultation of *Fusarium* keratitis cases in Hong Kong, January 2005 – May 2006.

**EDITORIAL BOARD** Editor-in-Chief Dr Thomas Tsang **Members** Dr Teresa Choi / Dr PH Chung / Dr SK Chuang / Fanny Ho / Dr YL Law / Vanessa Li / Dr Edmond Ma / Dr YH Tam / Thomson Wu / Dr Raymond Yung **Production Assistant** Kristy Cheng / Lo Wai Tim. This publication is produced by the Centre for Health Protection (CHP) of the Department of Health, 147C, Argyle Street, Kowloon, Hong Kong ISSN 1818-4111 **All rights reserved** Please send enquiries to [cdsinfo@dh.gov.hk](mailto:cdsinfo@dh.gov.hk)

28 years). Twenty-five (75%) required hospital admission. Thirty-two of these patients were successfully interviewed. They presented with eye pain (100%), redness (84%), foreign body sensation (31%), tearing (34%), blurring of vision (28%) and photophobia (41%). Thirty patients were disposable (weekly, bi-weekly or 4-weekly) contact lens users while two patients used traditional soft lenses. Twenty-nine out of 32 (90.6%) patients recalled that they solely used Bausch & Lomb (B&L) ReNu® brand contact lens solution before onset of symptoms. Among them, 27 patients could specify the product line to be B&L ReNu with MoistureLoc® while the other two patients forgot the exact B&L ReNu® product line they used.

To determine the association between the usage of B&L ReNu® brand contact lens solution and the development of *Fusarium* keratitis, a case-control study was conducted from February to March 2006. A case was defined as a disposable contact lens user who had ophthalmologist-diagnosed keratitis and a positive culture of *Fusarium spp.* from corneal scrapping between January 1, 2005 and March 31, 2006. Controls were asymptomatic disposable contact lens users recruited from three Department of Health (DH) Families Clinics. Demographic characteristics and exposure to potential risk factors were collected using a structured questionnaire. A hygiene score (11-50) based on 10 questions developed in collaboration with the Singapore Ministry of Health was used to assess the hygiene practice related to soft contact lens use, with a higher score signifying better hygiene practice. Univariate analysis and binary logistic regression model were used to derive odds ratios (OR) for significant risk factors, using Statistical Package for Social Sciences (SPSS) version 13.0.

In this study, 24 cases and 86 controls were included. The crude OR for using B&L ReNu® brand contact lens solution was 16.56 (95%C.I. = 2.69 - 99.93, p<0.001). The association between using B&L® brand contact lens solution and the development of *Fusarium* keratitis remains to be statistically significant (adjusted OR = 26.1, 95%C.I. = 3.03 - 225.3) after adjusting for other potential confounders. This is consistent with similar studies conducted in Singapore and the US. Other risk factors identified in this study include lower hygiene score (adjusted OR = 0.80, 95%C. I. = 0.70 - 0.91) and less than two years use of contact lens (adjusted OR = 8.77, 95%CI = 1.69 - 45.46).

Species identification and gene sequencing were conducted using available *Fusarium* isolates obtained from the local patients to further define any potential linkage. Among 18 isolates obtained, 13 were *Fusarium solani* (formae speciale pisi) and 5 were *Fusarium oxysporum* (formae speciale melonis). While phylogenetic analysis using multilocus sequencing is in progress, preliminary findings suggest existence of multiple genotypes among these clinical isolates from local patients (Unpublished data from the Department of Microbiology, University of Hong Kong). Representative strains have also been sent to the US Centers for Disease Control and Prevention (CDC) in Atlanta for pooled analysis and comparison with those obtained from Singapore and the US to determine the genetic relatedness.

Since February 22, B&L (HK) Ltd. has voluntarily suspended the sales of ReNu® products from the local market and on May 15, 2006, Bausch & Lomb Inc. further announced a recall and permanent removal of ReNu with MoistureLoc® contact lens solution from the global market. CHP will continue to work closely with local and international experts especially the Singapore Ministry of Health and the US CDC to protect the local consumers.

(...cont'd)

inform doctors and the public accordingly.

### A local sporadic case of meningococcaemia

On June 5, 2006, CHP confirmed a second case of meningococcal infection of this year. The patient was a 50-year-old woman presented with fever, abdominal pain, diarrhoea and vomiting since May 30 requiring hospitalization the following day. On admission, she was found to have fever and blood tests showed neutrophilic leukocytosis (WBC 30.2, reference: 3.9-10.7), prolonged prothrombin time (18.5 sec, reference: 10-12.6) and elevated liver transaminase (ALT 111, reference: 7-34). Her blood culture grew *Neisseria meningitidis* serogroup C. The clinical diagnosis was meningococcaemia and her condition was stabilized after treatment with intravenous penicillin G and cefotaxime. The patient was a restaurant worker living in Yuen Long district. She was a non-smoker and her past health was unremarkable. She had no travel history outside of Hong Kong during the incubation period. Antibiotic prophylaxis was given to all her household contacts and workplace close contacts and so far, none developed symptoms suggestive of meningococcal infection. There were a total of 4 meningococcal infections in 2005.

### RISK COMMUNICATION DIGEST

Press Release	#
EV 71	4
Dengue fever	2
Food poisoning	1
Human myiasis	1
Japanese encephalitis	1
Meningococcal infection	1
Media interviews	
AIDS	1
Trend of infectious diseases	1

## Norovirus season extended through May 2006

**Reported by DR YL LAW, Medical Officer, Surveillance and Epidemiology Branch, CHP.**

The Centre for Health Protection (CHP) observed persistent increase in acute diarrhoeal disease activity this year through the sentinel surveillance system based at residential care homes for the elderly (RCHEs or elderly homes) and outbreak monitoring.

Norovirus infections can be caused by exposure to vomitus or faeces of infected persons, or fomites, or consumption of contaminated food or water. It usually occurs during winters and the disease activity was very low between May and July in the last two years.

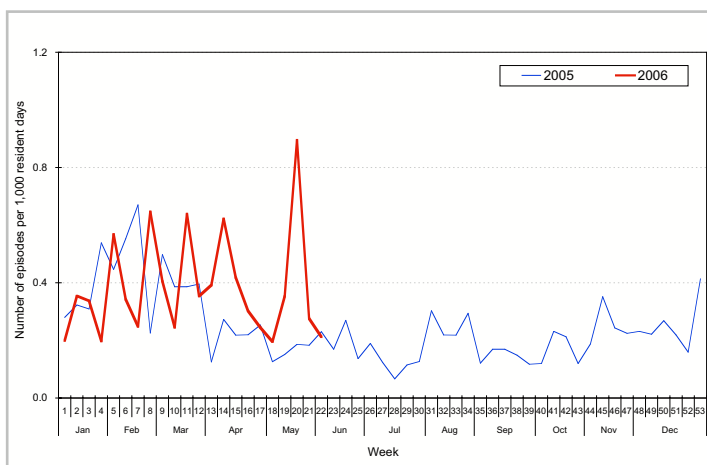


Figure 1 - Number of acute diarrhoeal disease episodes per 1,000 resident-days, 2005 - 2006.

This year, the sentinel surveillance system based at RCHEs recorded elevated level of acute diarrhoeal activities in May (Figure 1). In 2005, high incidence of acute diarrhoea was observed from January to March. In the first four months of 2006, the number of acute diarrhoeal episodes was between 0.2 and 0.6 per 1000 resident-days. In May, an upsurge to 0.9 per 1,000 resident-days was recorded in the third week. The sentinel surveillance systems based at child care centres (CCC), private doctors and general out-patient clinics did not show a similar pattern.

As for outbreak monitoring (excluding outbreaks due to food poisoning), there were 25 laboratory confirmed norovirus outbreaks reported in May this year, as compared with 6 to 12 outbreaks from January to April 2006.

Table 1 - Confirmed noroviral outbreaks in various settings in 2006.

	Jan	Feb	Mar	Apr	May	Total
<b>RCHE</b>	4	4	5	4	21	38
<b>CCC</b>	0	0	1	0	0	1
<b>Primary/ Secondary School</b>	1	2	2	0	0	5
<b>Hospital</b>	1	0	4	2	2	9
<b>Other institutions</b>	0	1	0	0	1	2
<b>Domestic settings</b>	1	2	0	0	1	4
<b>Total</b>	8	9	12	6	25	59

Table 1 shows the type of settings where the outbreaks took place since January. The number of food poisoning outbreaks due to norovirus in the community remained low in April and May.

Comparing the outbreaks that occurred in May to those reported in the first four months of 2006, residents of elderly homes continued to be the most affected group. A total of 21 outbreaks occurred at RCHEs in May as compared with 4-5 in the first four months. The number of residents and staff affected in May had exceeded that of the total from January to April. In May, a total of 281 residents and 15 staff were affected. The number of persons affected in each outbreak ranged from 4 to 52 with a median of 10.

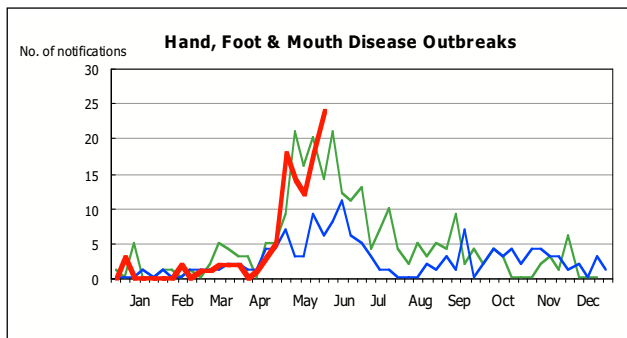
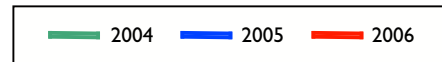


Figure 2 - Geographical distribution of 21 acute gastroenteritis outbreaks in RCHE in May 2006.

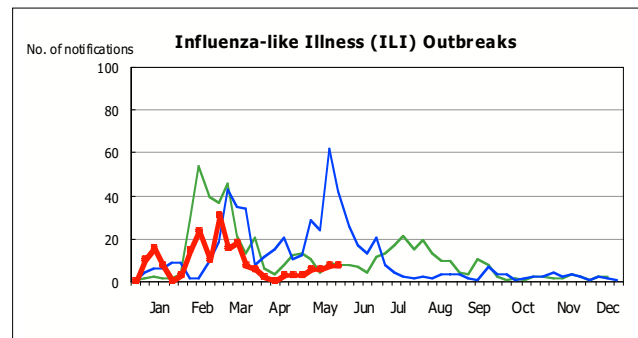
The 21 noroviral outbreaks in RCHEs were distributed in 8 districts (Figure 2). Tuen Mun (5 outbreaks) had the highest number of cases and was followed by Eastern District (4 outbreaks). Epidemiological investigations revealed no specific linkage between outbreaks in different RCHEs in terms of staff, residents and food source.

In summary, this year we observed a prolonged norovirus season until May, with elderly homes being predominantly affected. Apart from conducting investigation and outbreak control measures by the CHP during each outbreak, the Elderly Health Services of DH also strengthen health education to RCHE staff, with emphasis on measures to prevent transmission of norovirus.

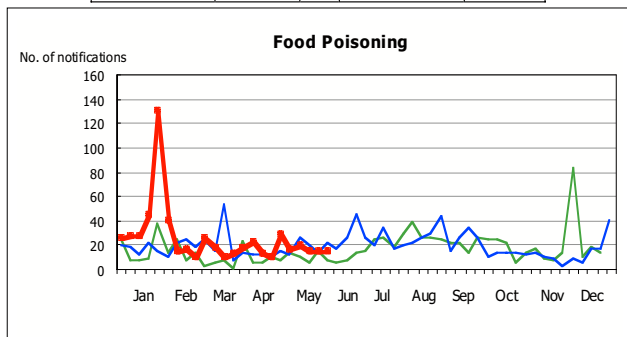
# SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEKS 22 - 23)



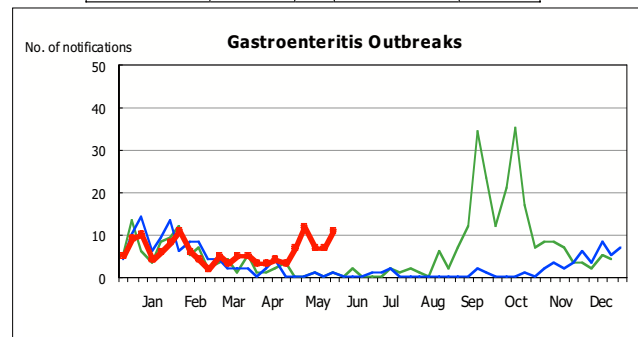
Week 20:	14	Week 22:	18
Week 21:	12	Week 23:	24



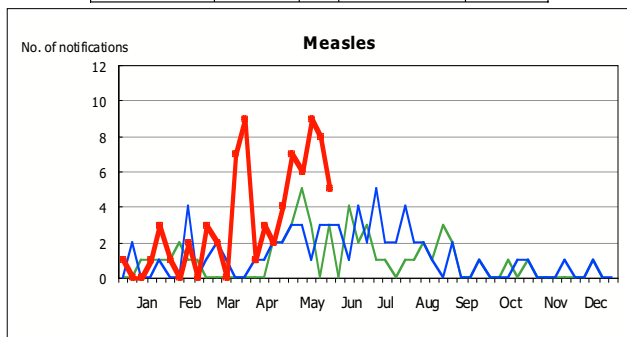
Week 20:	5	Week 22:	7
Week 21:	5	Week 23:	7



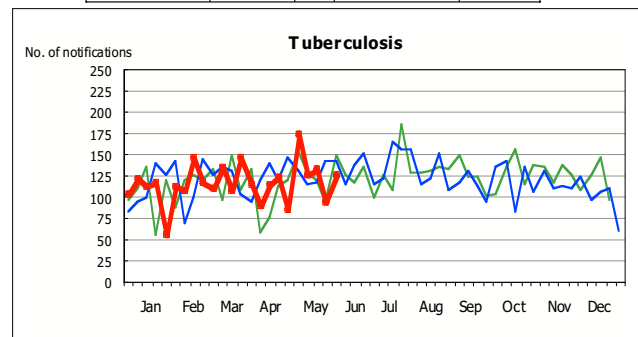
Week 20:	19	Week 22:	14
Week 21:	15	Week 23:	14



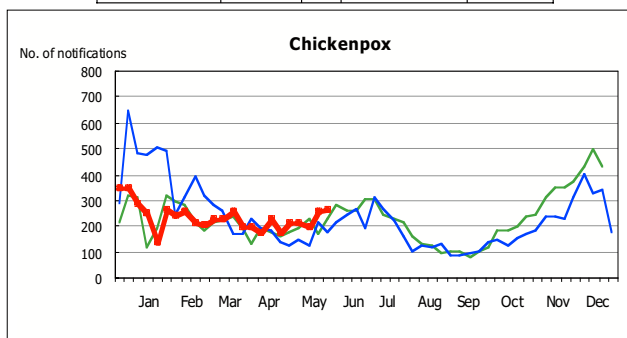
Week 20:	12	Week 22:	7
Week 21:	7	Week 23:	11



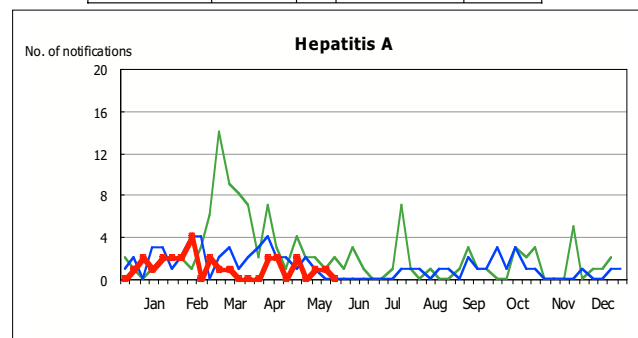
Week 20:	6	Week 22:	8
Week 21:	9	Week 23:	5



Week 20:	124	Week 22:	94
Week 21:	132	Week 23:	124



Week 20:	207	Week 22:	253
Week 21:	193	Week 23:	262



Week 20:	0	Week 22:	1
Week 21:	1	Week 23:	0

Data contained within this bulletin is based on information recorded by the Central Notification Office (CENO) and Public Health Information System (PHIS) up until June 10, 2006. This information may be updated over time and should therefore be regarded as provisional only.