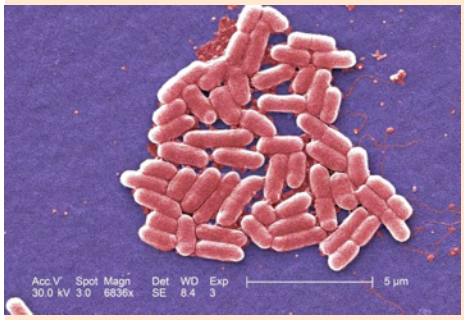
衞生防護中心
Centre for Health Protection
保障市民健康
Protecting Hong Kong's health
Department of Health
Hong Kong SAR

COMMUNICABLE DISEASES ....WATCH

Feature:
Increase in scarlet fever cases in 2011
Statutory reporting of STEC infection starting June 10, 2011

LENS ON CHP



Above: E. coli bacteria of the strain O157:H7 is the most recognised serogroup of Shiga toxin-producing Escherichia coli (Source: US CDC/ Janice Haney Carr)

NEWS

CA-MRSA cases in May

In May 2011, CHP recorded 51 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 29 males and 22 females aged between 5 months and 72 years (median 24 years). Among them were 34 Chinese, 6 Filipinos, 3 Australian, 2 Indian, 1 Korean and 5 of unknown ethnicity. The isolates of all 51 cases exhibited Panton-Valentine Leucocidin (PVL) gene and were positive for SCC*mec* type IV (36) or V (15). All cases presented with skin or soft tissue infections and were in stable condition. Two cases were doctors and one was a nurse working in the public sector. Investigations did not reveal any cases linked with them. Among the cases, two were siblings and were sisters of a case confirmed in April 2011. Another case was the father of a case confirmed in February 2011.

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Increase in scarlet fever cases in 2011

Reported by Dr Michael CK Lau, Medical Officer, Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

Scarlet fever (SF) is an exotoxin-mediated infection caused by Group A Streptococcus (GAS). There has been an increase of SF cases reported to the Centre for Health Protection (CHP) since April 2011. The number of cases recorded in 2011 (up to June 11, 2011) was 358, which exceeded the annual number of cases recorded in the past 10 years. Historically, relatively more cases (about 80% during 2005-2010) occurred between December and July (Figure 1).

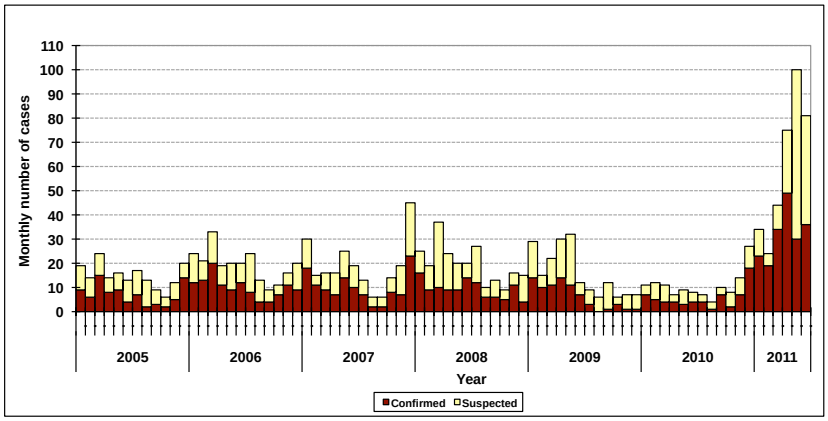


Figure 1 - Monthly number of scarlet fever cases, 2005-2011 (up to June 11, 2011).

Among the 358 SF cases reported up to June 11, 2011, 191 (53%) were confirmed by laboratory tests (either positive throat or wound culture for GAS or a serum anti-streptolysin O antibody titre greater than 1:200) while the remaining 167 (47%) were reported based on clinical diagnosis. These proportions are comparable with historical observations.

The epidemiological characteristics of cases this year were broadly similar to those reported in previous years. 343 cases (96%) were children under 10 years old, with peak incidence among in children aged 4-7 years (median: 6 years, range: 1 month – 31 years) (Figure 2). Males were more affected than females with a male to female ratio of 1.6 to 1. 128 cases (36%) required hospitalization. Three cases developed complications, including a 7-year-old girl who developed toxic shock syndrome and died, an 11-year-old boy who developed right parapharyngeal abscess and recovered, and a 6-year-old boy who developed septicaemia and left paraspinal muscle abscess and is in stable condition.

Local cases comprised 97% of all SF patients. While most (90%) SF cases were sporadic without epidemiological linkage, six clusters had occurred in schools and institutions, including three in kindergartens/child care centres,

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*

two in primary schools and one in a special residential child care centre. A total of 21 cases were affected, with 2 – 7 cases involved in each cluster (median: 3 cases). Another eight small clusters occurred in household settings with 2-3 cases involved in each cluster.

Figure 2 - Age distribution of scarlet fever cases recorded in 2011 (up to June 11, 2011).

Two observations may underlie the rise in incidence in SF in 2011. First, a simultaneous increase of SF cases is also noted in mainland China and Macao. Compared with comparable periods in 2010 (January – May), the number of SF cases in 2011 rose by 262% and 471% respectively in mainland China and Macao, as compared with 456% in Hong Kong. This suggests a regional phenomenon at play.

Second, laboratory surveillance data on GAS among throat swab specimens from public out-patient clinics showed that the most prevalent *emm* type (gene of M protein) so far in 2011 was *emm* type 12 (14 out of 18 strains, 78%). Other *emm* types (4 out of 18 strains, 22%) included one strain each of type 3, 4, 28 and 77. In contrast, no *emm* type was clearly dominant in 2010. Out of 7 strains typed in 2010, *emm* type 12 accounted for two strains (29%), with the remaining five strains belonging to types 1, 4, 81 and 89, one other strain being untypable. A previous study in Taiwan reported that shuffling of several prevalent *emm* clones may be responsible for the large fluctuation in the number of scarlet fever cases over the years[1].

On the other hand, the increase in reported SF cases this year cannot be accounted for by a change in diagnostic fashion or increase in varicella incidence. The number of laboratory confirmed SF also rose significantly, and only a small percentage (1%) of SF cases had accompanying varicella infection.

GAS resistant to the macrolide group of antibiotics is known to be common in Hong Kong. According to local antibiotic resistance surveillance data from the University of Hong Kong and the Public Health Laboratory Centre of CHP, about 50% of GAS strains isolated in 2011 were resistant to erythromycin or clindamycin. All GAS isolates were sensitive to penicillin. The agent of choice for empirical treatment of SF should be penicillin or first generation cephalosporins. Antibiotics belonging to the macrolide group (e.g., erythromycin) would not be appropriate in view of the high proportion of GAS resistant to them.

Classically, SF presents with fever, sore throat, red and swollen tongue (known as strawberry tongue) and erythematous rash characterized by a 'sandpaper' texture. People suspected to have SF should consult doctors immediately. The diagnosis of SF mainly relies on clinical features. Early use of antibiotics in SF patients will prevent clinical deterioration and complications. Antibiotic treatment also shortens the period of infectivity and will prevent transmission of GAS within 24 hours of treatment. It is important to note that some invasive GAS infections may not present with classical signs of SF, such as streptococcal toxic shock syndrome.

Patients who are suffering from SF should not go to schools or child care centres until they fully recover. To prevent SF, one should:

- Maintain good personal and environmental hygiene;
- Keep hands clean and wash hands properly;
- Wash hands when they are dirtied by respiratory secretions, e.g., after sneezing;
- Cover nose and mouth while sneezing or coughing and dispose of nasal and mouth discharge properly;
- Keep good ventilation.

[1]*Chiou CS et al. Association of the shuffling of Streptococcus pyogenes clones and the fluctuation of the scarlet fever cases between 2000 and 2006 in central Taiwan. BMC Micrology 2009; 9:115*

(...cont'd)

A probable case of sporadic Creutzfeldt-Jakob Disease

On May 25, 2011, CHP recorded a probable case of sporadic Creutzfeldt-Jakob Disease (CJD) affecting a 78-year-old woman with known hypertension. She resided in the United Kingdom and visited Hong Kong regularly. She came to Hong Kong in March 2011 and was noted to have asymmetric gait. She later developed progressive deterioration of cognitive functions and was admitted to a public hospital on April 11. Electroencephalogram showed generalized 1-2Hz epileptiform discharges and magnetic resonance imaging of the brain showed features compatible with CJD. She was classified as a probable case of sporadic CJD based on the criteria of the World Health Organization, with progressive dementia, myoclonus, extrapyramidal dysfunction and typical EEG findings. MRI brain showed no Pulvinar sign. There was no feature of early psychiatric or painful sensory symptoms. The patient had no family history of CJD and no previous relevant high-risk surgical procedures. She is currently in stable condition.

A case of necrotizing fasciitis caused by *Vibrio vulnificus*

On June 2, 2011, CHP recorded a case of necrotizing fasciitis due to *Vibrio vulnificus* infection affecting a 60-year-old woman with good past health. Her left calf was injured by a fish in a wet market on May 28. She developed increasing pain and redness over the wound thereafter and was admitted to a public hospital the next day. The clinical diagnosis was necrotizing fasciitis. Emergency excisional debridement of her left leg wound was carried out and wound and tissue swabs grew *Vibrio vulnificus*. Her condition improved with treatment and she is currently stable.

Statutory reporting of Shiga toxin-producing *Escherichia coli* infection starting June 10, 2011

Reported by FANNY WS HO, Scientific Officer, Enteric and Vectorborne Disease Office, Surveillance and Epidemiology Branch, CHP.

An outbreak of Shiga toxin-producing *Escherichia coli* (STEC) infection was reported in Germany since early May, causing a significant number of patients presented with haemolytic uraemic syndrome (HUS) and bloody diarrhoea. According to the latest information provided by the World Health Organization (WHO) and the European Center for Disease Prevention and Control (ECDC), as of June 15, 2011, 2470 STEC and 784 HUS cases were reported in Germany. So far, 36 patients died of this infection. The outbreak affected the northern part of Germany most severely, mainly Schleswig-Holstein, Lower Saxony, North-Rhine-Westphalia and Hamburg. Majority of these cases were adults aged over 20 years, predominantly women.

Fourteen other countries such as Austria, Czech Republic, Sweden, the Netherlands, Denmark, the United Kingdom and the United States have also reported more than 100 cases related to this outbreak, of which 37 were complicated with severe renal complications including one death in Sweden. Majority of these foreign cases had travelled to Germany during the incubation period. Laboratory results indicated that the outbreak was caused by an unusual strain O104:H4, which was previously seen in humans, but never in an outbreak, as stated by the WHO.

On June 10, the German authorities stated that mounting epidemiological and food-chain evidence indicated that bean and seed sprouts (including fenugreek, mung beans, lentils, adzuki beans and alfalfa) were the vehicle of this outbreak. Food items originating from a producer in Lower Saxony were the most likely vehicle of the infection and all food products (e.g. bean sprouts and other vegetables) originating from this producer had been withdrawn from the market. The German authorities had lifted their earlier warning about eating cucumbers, tomatoes and lettuce in northern parts of Germany. The German public was advised to maintain good hygiene practices when handling food or caring for patients and to abstain from eating raw sprouts, home grown, uncooked sprouts and seedlings. Further investigations are still ongoing to identify the original source of the infection.

The Centre for Health Protection (CHP) has been closely monitoring the situation in Germany and communicating with the World Health Organization and German authorities for latest information about the outbreak. In Hong Kong, *Escherichia coli* O157:H7 is the most important serogroup of STEC. As of June 15, 2011, 10 cases of *Escherichia coli* O157:H7 had been recorded by CHP since July 2008. No fatal cases were recorded so far and none were diagnosed to have suffered from renal complications.

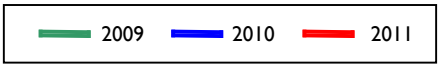
In view of the current situation and the severity of the disease, the Department of Health has widened the scope of surveillance to cover not only the existing *E. coli* O157:H7 strain but other strains of Shiga toxin-producing *Escherichia coli* in the list of infectious disease under the Prevention and Control of Disease Ordinance (Cap. 599) with effect from June 10, 2011. A letter was issued on the same day to remind all doctors to report any STEC cases to the Central Notification Office of the CHP via fax (2477 2770), phone (2477 2772) or CENO On-line website (www.chp.gov.hk/ceno).

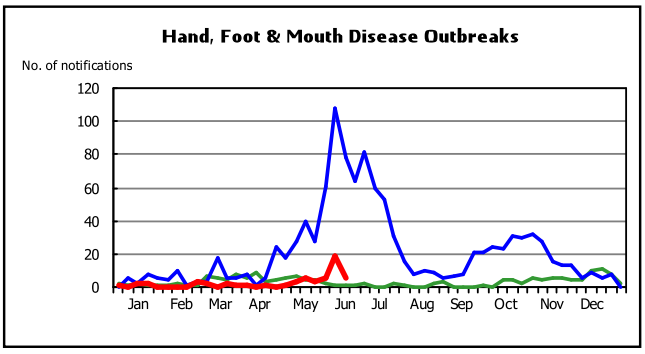
Source: ECDC Outbreak of Shiga toxin-producing E. coli in Germany, June 15, 2011. Available from: http://www.ecdc.europa.eu
WHO EHEC outbreak : Update 16. Available from: http://www.who.int

Shiga toxin-producing *Escherichia coli* (STEC) is a type of bacteria that can produce powerful toxins and may cause severe gut symptoms, like bloody diarrhoea. *Escherichia coli* O157:H7 is the most important serogroup of STEC. Besides the strain currently causing outbreak in Germany, other serogroups of STEC included O26, O103 and O111. The incubation period ranges from about 2 to 10 days. Infection is characterized by diarrhoea, often bloody, abdominal cramps and vomiting. In severe cases, it may be complicated by renal and bleeding complications. If not properly treated, the infection can be fatal.

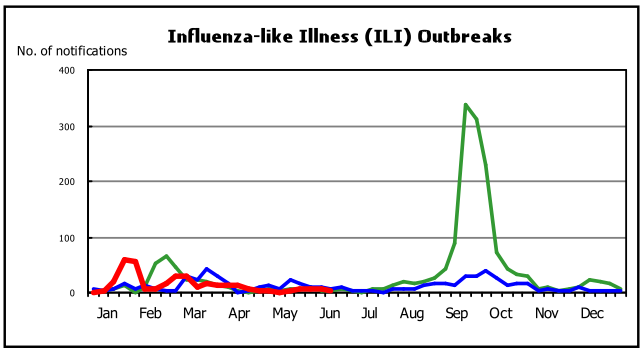
STEC infection is transmitted to humans through consumption of contaminated water or undercooked contaminated food, especially minced beef, hamburgers and roast beef. Cases due to consumption of raw milk, cheese, vegetables, fruit juices and yogurt have been reported. Moreover, if personal hygiene is poor, person-to-person transmission of these bacteria is possible through faecal-oral route. People of any age can become infected. Very young children and the elderly are more likely to develop severe illness, but even healthy older children and young adults can become seriously ill. To prevent STEC infection, members of the public should maintain strict personal and food hygiene, and cook food thoroughly before consumption. More health information about STEC is available at CHP website: www.chp.gov.hk

SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEK 23 - WEEK 24)

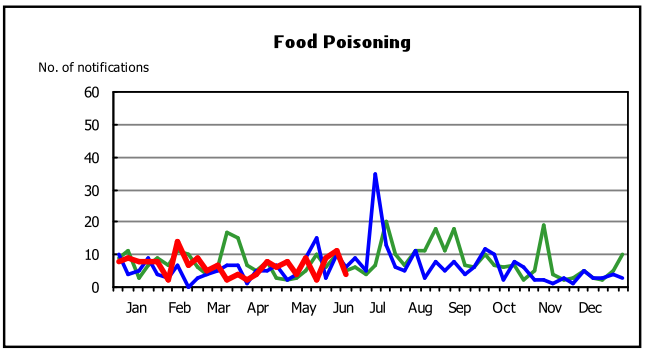




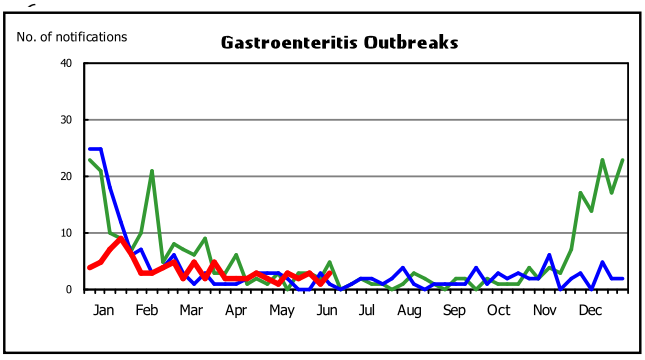
Week 21:	3	Week 23:	19
Week 22:	6	Week 24:	5



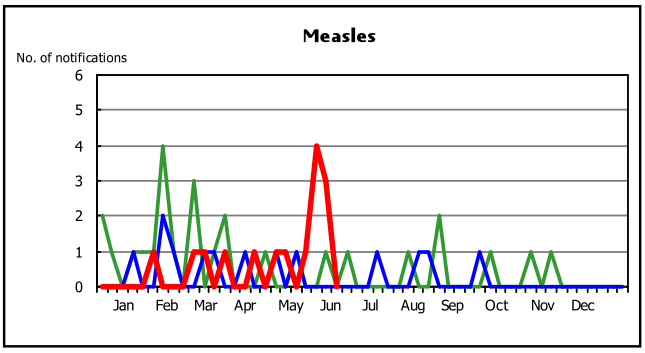
Week 21:	7	Week 23:	6
Week 22:	6	Week 24:	4



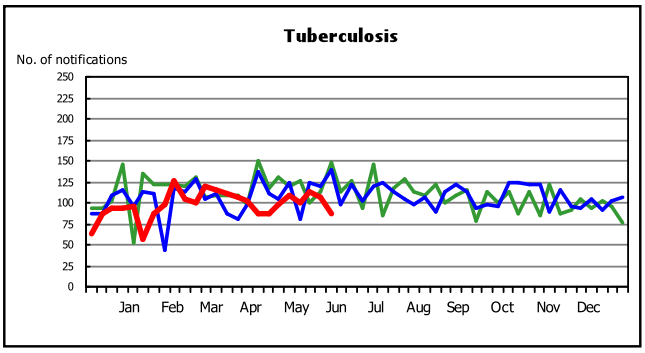
Week 21:	2	Week 23:	11
Week 22:	9	Week 24:	4



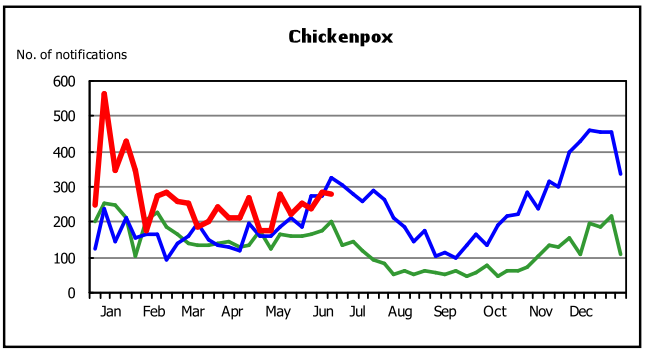
Week 21:	2	Week 23:	1
Week 22:	3	Week 24:	3



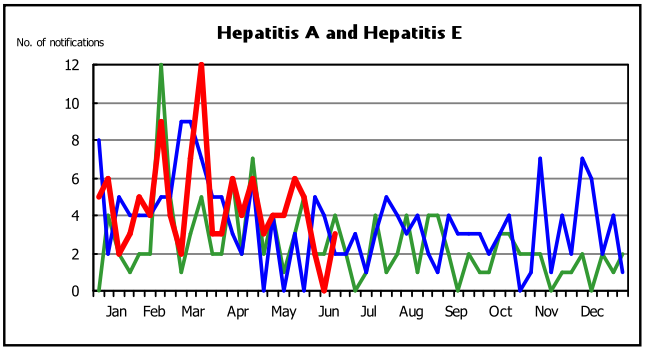
Week 21:	1	Week 23:	3
Week 22:	4	Week 24:	0



Week 21:	101	Week 23:	106
Week 22:	113	Week 24:	88



Week 21:	256	Week 23:	283
Week 22:	236	Week 24:	280



Week 21:	5	Week 23:	0
Week 22:	2	Week 24:	3

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 11, 2011. This information may be updated over time and should therefore be regarded as provisional only.