

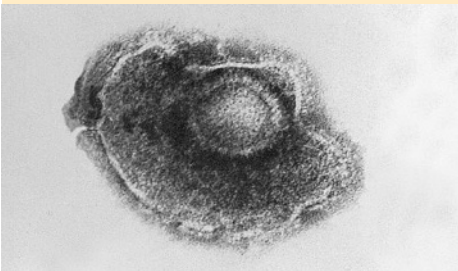


Feature:

Review of chickenpox situation in Hong Kong
Update on Lyme disease



LENS ON CHP



Above : Electron microscopy of a varicella (chickenpox) virus (Source: CDC/Dr Erskin Palmer, B.G. Partin).

NEWS

CA-MRSA cases in January

In January 2012, CHP recorded 56 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 33 males and 23 females aged between 7 months and 85 years (median 34.5 years). The isolates of all 56 cases exhibited Panton-Valentine Leucocidin (PVL) gene and were positive for SCCmec type IV (32) or V (24).

Among the cases were 34 Chinese, 12 Filipinos, 2 Nepalese, 2 Pakistanis, 1 Caucasian, 1 Russian, and 4 of unknown ethnicity. One 85-year-old man presented with fever, productive cough and hypotension and was diagnosed to have septic shock. His blood was positive for CA-MRSA. He was treated with antibiotics and was in stable condition. All other cases presented with skin or soft tissue infections and were in stable condition.

Two cases were nurses and they were not epidemiologically linked. A household contact of one of the nurses also suffered from CA-MRSA infection

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Review of chickenpox situation in Hong Kong

Reported by DR PW CHIM, Medical Officer, Vaccine Preventable Disease Office, Surveillance and Epidemiology Branch, CHP.

Chickenpox is the most commonly reported notifiable infectious disease in Hong Kong. Epidemics cycles of chickenpox usually occur in every three to four years. From 2000 to 2011, the annual notifications of chickenpox ranged from 6,777 (in 2009) to 17,940 (in 2007), with peaks at years 2002 and 2007 (Figure 1). Based on historical trend, it is possible that higher chickenpox activity may be observed in 2012 and 2013.

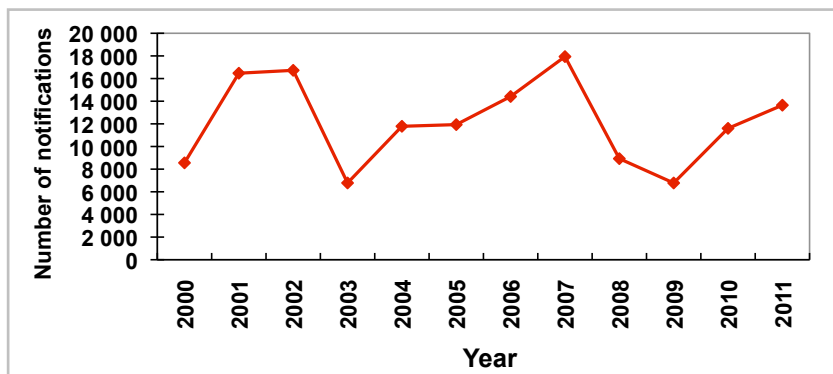


Figure 1 - Annual number of notifications of chickenpox in Hong Kong, 2000 - 2011.

In Hong Kong, the peak season of chickenpox is in winter to early spring, usually from November to February. The disease activity also tends to be higher in June and July (Figure 2).

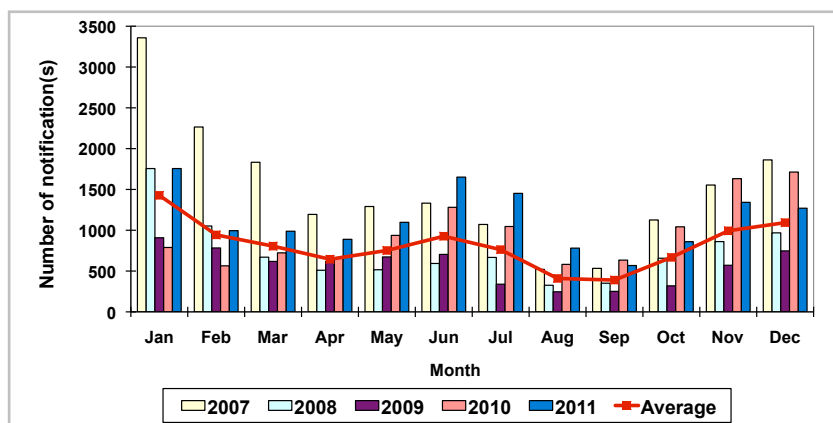


Figure 2 - Monthly chickenpox notifications in Hong Kong, 2007 - 2011.

The Centre for Health Protection (CHP) recorded 13,648 chickenpox notifications in 2011. The male-to-female ratio was 1:0.88. Chickenpox

EDITORIAL BOARD Editor-in-Chief Dr SK Chuang **Members** Dr Monica Wong / Dr Yonnie Lam / Dr Eddie Sin / Simon Wong / Dr WC Kong / Dr TY Wong / Dr TS Lam / Dr Emma Luk / Dr Shirley Tsang / Fanny Ho **Production Assistant** Gladys Lo / Tracy Ho. 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

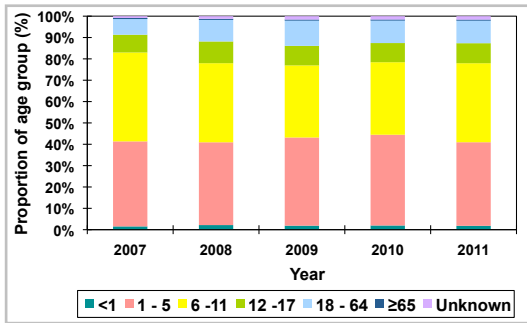


Figure 3 - Age distribution of chickenpox notifications in Hong Kong, 2007 - 2011.

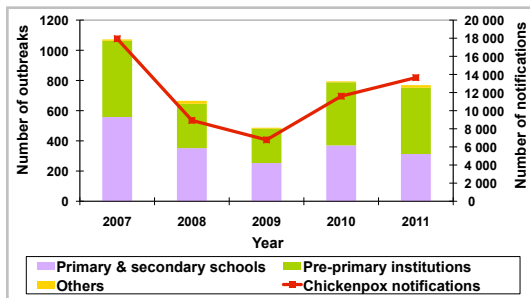


Figure 4 - Number of institutional chickenpox outbreaks and notifications in Hong Kong, 2007 - 2011 (provisional data as of January 30, 2012).

primary institutions and 313 outbreaks (41% of total outbreaks) occurred in primary and secondary schools.

Chickenpox is generally a mild disease and is usually self-limiting. The last registered local fatal case of chickenpox was in 2000. For most patients, symptomatic therapy is usually all that is required. Patients usually recover in about 2 - 4 weeks. Secondary bacterial infection of the wound may sometimes occur. Among all cases recorded in 2011, less than 0.3% were complicated with scarlet fever. Although almost all persons develop lifelong immunity after chickenpox infection, the virus may remain latent in the body and recur many years later as herpes zoster (shingles) which is a painful, blistering skin rash.

Those with weakened immunity or who are pregnant are most likely to suffer from severe complications such as pneumonia and encephalitis. Newborn babies who develop chickenpox can result in severe illness and even death. Infection in early pregnancy may be associated with congenital malformation of the fetus.

Chickenpox vaccine is effective. About 8 to 9 of every 10 people who are vaccinated are protected from chickenpox. Currently, two types of chickenpox vaccine are available in Hong Kong, namely single chickenpox vaccine, and combined measles, mumps, rubella and varicella (MMRV) vaccine. Both types of chickenpox vaccine are live attenuated vaccines. Members of the public who would like to receive chickenpox vaccine for personal protection may approach their family doctors for advice.

To prevent spread of chickenpox, sick children should stay at home and be excluded from school for about one week or until all vesicles have dried up to prevent spreading the disease to others. Members of the public should also observe the following measures to prevent chickenpox:

- Maintain good personal and environmental hygiene;
- Maintain good indoor ventilation;
- Keep hands clean and wash hands properly;
- Cleanse used toys and furniture properly;
- Consider vaccination for personal protection.

mainly affects children. In 2011, 41% of reported chickenpox cases were below 6 years old and 78% of cases were below 12 years old. Despite variation of notified chickenpox numbers, the age distribution of cases in Hong Kong remained similar from 2007 to 2011 (Figure 3).

More outbreaks were recorded in years with high chickenpox activities (Figure 4). These outbreaks occurred mostly in pre-primary institutions (kindergarten, child care centre, etc) or schools (primary and secondary). In 2011, 439 outbreaks (57% of total outbreaks) occurred in pre-

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in October 2011. Among the remaining cases, another case was the mother of a case confirmed in October 2011.

The number of CA-MRSA cases in December 2011 was revised to 42.

A sporadic case of listeriosis

CHP recorded a case of listeriosis on January 30, 2012, affecting a 91-year-old female with history of diabetes mellitus. She lives alone in Eastern District and presented with progressive worsening of general condition and reduced appetite since mid-January 2012. She was admitted to a public hospital and was found to have hypothermia with hypotension on January 22. A blood specimen taken on admission grew *Listeria monocytogenes*. She was treated with intravenous antibiotics and was in stable condition in hospital. The patient did not recall taking high risk food such as raw food or cheese and had not travelled outside Hong Kong during the incubation period.

Two imported cases of spotted fever

CHP recorded two epidemiologically linked cases of spotted fever on January 20, 2012, affecting the father and daughter of a family. The father presented with headache, lymphadenopathy and eschar on January 4 while the daughter presented with an eschar and tender lymph node on January 6. Their serological tests showed more than four-fold rise in antibody titre against the spotted fever group rickettsia. Both consulted a private doctor on January 6 and were successfully treated with doxycycline. They were in stable condition all along and did not require hospitalisation.

The two patients travelled with three other family members to Mpumalanga of South Africa for game drive and bush walking from December 21 to 31, 2011 where they recalled tick bites in game reserves. Two other family members (the mother and another elder daughter) also suffered from similar but milder symptoms and received treatment from the private doctor. Serological test for the mother did not show rising antibody titre while laboratory investigation was not done for the elder daughter. The other child remained asymptomatic.



Chickenpox (varicella) is an acute infectious disease caused by varicella-zoster virus. It predominantly affects children under 12 years of age. Incubation period is about 2 - 3 weeks. Patient usually presents with fever and itchy skin rashes. Rashes develop in crops over a period of 5 days on body and then spread to the face, arms and legs. The rashes first appear as flat spots and later as vesicles. The vesicles continue for 3 - 4 days, then dry up and form scabs. The diagnosis of chickenpox is primarily clinical, based on the early prodromal symptoms and characteristic skin rash.

Chickenpox is very infectious, especially in the early stage of rash eruption. It is infectious from 1 - 2 days before rash appears and until all vesicles have dried up. Chickenpox is mainly spread through droplets or air. The disease can also spread through direct or indirect contact with the discharge from vesicles. The virus enters the host through the upper-respiratory tract or the conjunctiva.

Update on Lyme disease

Reported by Miss DORIS CHOI, Scientific Officer, Enteric & Vectorborne Disease Office, Surveillance and Epidemiology Branch, CHP.

Lyme disease is a tick-transmitted bacterial infection caused by pathogenic genospecies of *Borrelia burgdorferi* (*B. burgdorferi*), collectively known as *Borrelia burgdorferi sensu lato* (*B. burgdorferi sl*), which is a slow-growing microaerophilic spirochete belonging to the genus *Borrelia*. It occurs predominately in temperate regions of Europe, North America and Asian countries including Mainland China, Japan and Taiwan where totally about 85,500 cases were estimated annually.

Lyme disease is transmitted by a number of closely-related, hard bodied and blacklegged *ixodid* ticks. The distribution of these ticks closely corresponds to the disease distribution described above. Human and many common species of small and medium-sized mammals, such as mice, rats, squirrels, hares, rabbits and ground-feeding bird species are the reservoir-competent hosts. The risk of human infection is higher in late spring and early summer when the nymphs, immature tick which is tiny (less than 2 mm) and difficult to see, feed on small mammals and human beings. Infected adult ticks can also transmit the bacteria in cooler months but they are large and easy to be discovered and removed before transmitting the bacteria.



Above: *Ixodes pacificus*
(Source: CDC/James Gathany,
William Nicholson).

Lyme disease is an inflammatory disorder affecting multiple systems, and is caused by an immune response to the pathogenic species of *Borrelia*. The incubation period is usually about 3 to 32 days. Clinically the infection can be asymptomatic. Approximately 80% of the people infected develop an early skin rash of localized inflammation, the erythema migrans (EMs) or "bull's eye rash", within 30 days of exposure. A typical EM is usually greater than 5 cm in diameter. This erythematous rash is commonly found over the thighs, groins, trunk and armpits. The rash gradually expands from the site of a tick bite and it usually feels warm to the touch but is rarely itchy or painful. Some patients may also have systemic flu-like illness without significant respiratory symptoms such as fever, fatigue, headache and muscle or joint pain.

Some signs and symptoms may not appear until weeks, months, or years after a tick bite and the disease can involve multiple systems. Clinical presentations of nervous system involvement include numbness, pain, nerve paralysis (such as facial palsy), and meningitis. Arthritis is most likely to appear as brief bouts of pain and swelling, usually in one or more large joints, especially the knees. Rarely, carditis and arrhythmia may occur. Multiple EMs lesions may also appear following haematogenous spread to other areas of skin.

The mortality rate of Lyme disease is low. There was only one death out of the 96,068 cases reported in the United States from 1999 to 2003. Early treatment with antibiotics stops the course of the disease and reduces the incidence of developing late stage complications. There is no evidence of person to person transmission thus far but individuals undergoing treatment for Lyme disease with antibiotics should not donate blood as the bacteria can survive in the blood products.

Ixodes granulatus is one of the main species transmitting *B. burgdorferi sl* in Southern China. This tick was last recorded in Hong Kong in the year 2008. Although serological test had not been done to ascertain the presence of *B. burgdorferi sl* in this vector, the risk of the disease in local setting cannot be excluded.

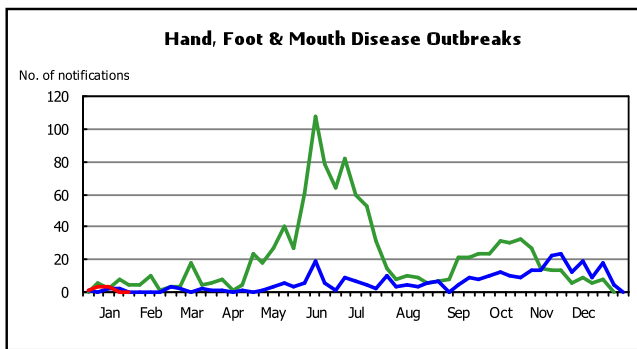
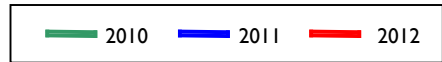
In Hong Kong, no laboratory confirmed human case has been reported to the CHP so far. Laboratory diagnosis for Lyme disease in the form of serological tests for IgM and IgG against *B. burgdorferi* can be arranged with the Public Health Laboratory Services Branch of the CHP for a clinically suspected case. Acute and convalescent clotted blood specimens should be obtained for serological tests.



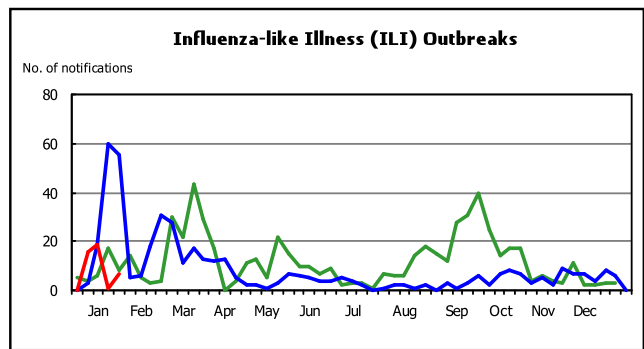
Tips for preventing Lyme disease

- Reduce the probability of tick bite by avoiding tick habitats;
- If it is not possible, risk of tick bite can be minimized by wearing light-coloured protective clothing with long trousers that tucked into socks and long sleeves clothes;
- Use of insect repellents can also decrease the risk of tick bites and *Borrelia* transmission;
- Shower and performance of thorough check for ticks after visiting the tick-infested areas;
- Prompt removal of ticks is one of the most effective ways of avoiding *Borrelia* infection;
- Seek medical advice if symptoms develop.

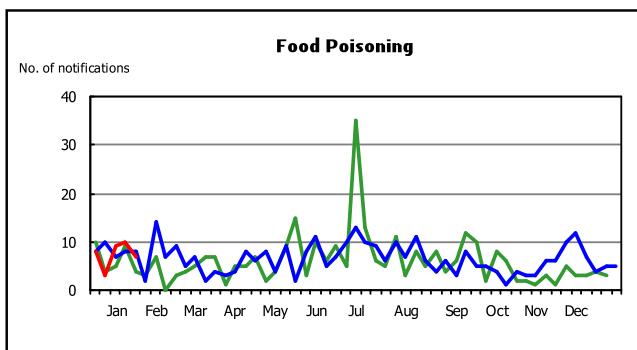
SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEK 4 - WEEK 5)



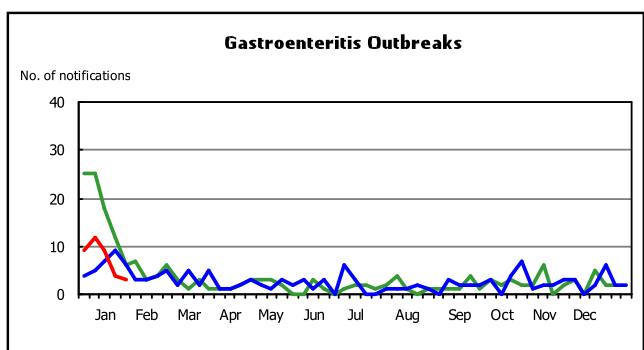
Week 2: 3 **Week 4: 0**
 Week 3: 3 **Week 5: 0**



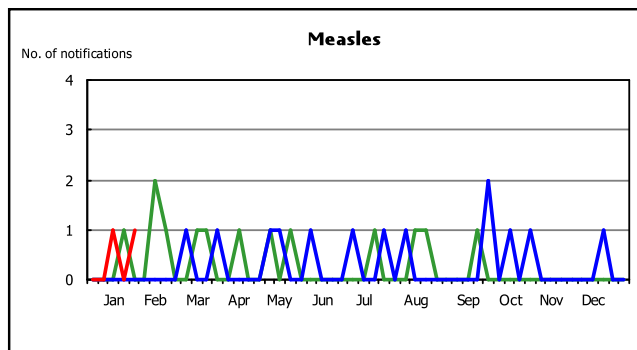
Week 2: 16 **Week 4: 1**
 Week 3: 19 **Week 5: 7**



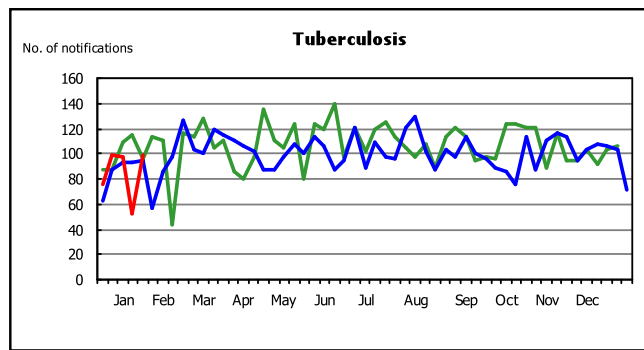
Week 2: 3 **Week 4: 10**
 Week 3: 9 **Week 5: 7**



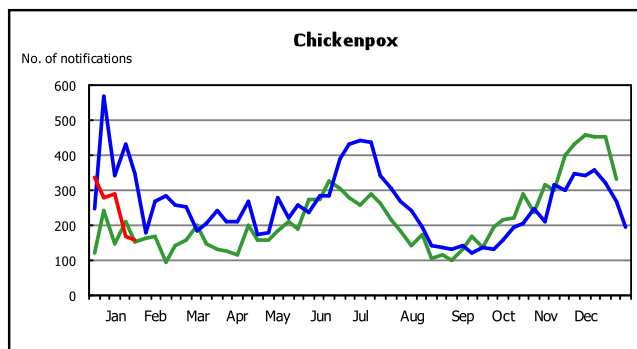
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 Week 3: 9 **Week 5: 3**



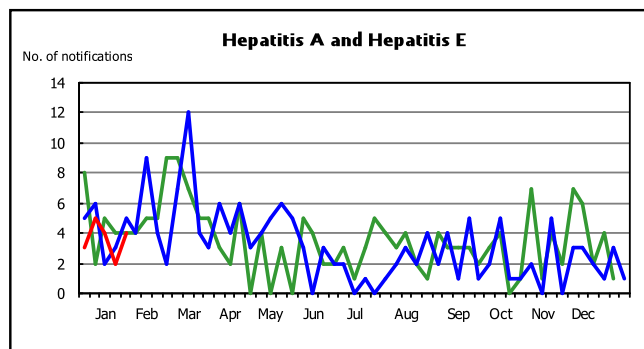
Week 2: 0 **Week 4: 0**
 Week 3: 1 **Week 5: 1**



Week 2: 99 **Week 4: 52**
 Week 3: 97 **Week 5: 99**



Week 2: 280 **Week 4: 169**
 Week 3: 290 **Week 5: 157**



Week 2: 5 **Week 4: 2**
 Week 3: 4 **Week 5: 4**

Data contained within this bulletin is based on information recorded by the Central Notification Office (CENO) and Public Health Information System (PHIS) up until February 4, 2012. This information may be updated over time and should therefore be regarded as provisional only.