



Department of Health
Hong Kong SAR

Feature:

Laboratory surveillance on invasive pneumococcal disease in Hong Kong 2010
The first Vaccination Week in the Western Pacific Region
Increase in scarlet fever cases during January-April 2011 in Hong Kong



LENS ON CHP



Above: World Health Day ceremony jointly organised by the Department of Health and the Hospital Authority on April 7, 2011.

NEWS

World Health Day - April 7, 2011

The Department of Health called on healthcare professionals and the general public to work together on the safe use of antibiotics to combat drug resistance on April 7, 2011. The call echoed World Health Organization (WHO)'s initiative to combat antimicrobial resistance, which is the theme of World Health Day (WHD) this year.

Addressing a ceremony to celebrate WHD, jointly organised by DH and the Hospital Authority, the Secretary for Food and Health, Dr York Chow, said that DH, supported by experts from both public and private health sectors as well as academia, is taking the lead in controlling the emergence and spread of antibiotic resistance and seeks to optimise the selection and use of antibiotics for the best benefits of patients.

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Laboratory surveillance on invasive pneumococcal disease in Hong Kong 2010

Reported by DR EDMUND HC FONG, Medical Officer, Vaccine Preventable Disease Office, Surveillance and Epidemiology Branch, and DR JANICE LO, Consultant Medical Microbiologist, Public Health Laboratory Services Branch, CHP.

Since September 2009, PCV7 had been incorporated into the Childhood Immunisation Programme in Hong Kong and it was subsequently replaced by 10-valent pneumococcal conjugate vaccine (PCV10) in October 2010.

A laboratory surveillance system on invasive pneumococcal disease (IPD) in Hong Kong has been set up and maintained by the Public Health Laboratory Services Branch (PHLSB) of the Centre for Health Protection (CHP) to monitor the trend of IPD, occurrence of serotype replacement and pattern of antimicrobial resistance. This report describes updated IPD laboratory surveillance findings in 2010.

From 2007 to 2010, the total number of invasive pneumococcal isolates analysed by PHLSB were 136, 137, 116 and 122 for persons of all ages, while the corresponding numbers were 19, 19, 10 and 15 for children below the age of 5 years[¶]. Compared with 2008, the percentage reduction of IPD in 2010 was 60% among children aged below 2 years, 21% among children aged below 5 years, and 11% among persons of all ages. These data lends support to the effectiveness of the PCV programme in reducing the incidence of IPD among children and other segments of the population via direct protection and possibly herd immunity effects.

In 2010, the most commonly encountered invasive pneumococcal serotypes were serotypes 3 and 14, representing 25% and 16% of all IPD isolates respectively. For children below 5 years, the number of serotype 3 isolates increased from one in 2009 to six in 2010, constituting 40% of invasive pneumococcal isolates analysed in this age group (Figure 1). There was no significant change in antimicrobial resistance pattern. As the number of IPD in children below 5 years was small, data on this age group should be interpreted with caution.

[¶] The number of isolates between 2007 and 2009 only included blood, cerebrospinal fluid, pleural fluid and pericardial fluid specimens, while all specimens collected from normally sterile site were included in 2010. The Human Swine Influenza (HSI) pandemic arrived in Hong Kong in May 2009. Intensive public health intervention measures during the first few months of the HSI epidemic (e.g., territory-wide school closures and community hygiene campaigns) might also have lowered IPD incidence during that period.

EDITORIAL BOARD Editor-in-Chief Dr SK Chuang **Members** Dr Christine Wong / Dr Monica Wong / Dr Eddie Sin / Simon Wong / Dr WC Kong / Dr TY Wong / Dr YH Leung / Dr YH Tam / Shirley Tsang / Fanny Ho **Production Assistant** Allan Chan / Elton Li. 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

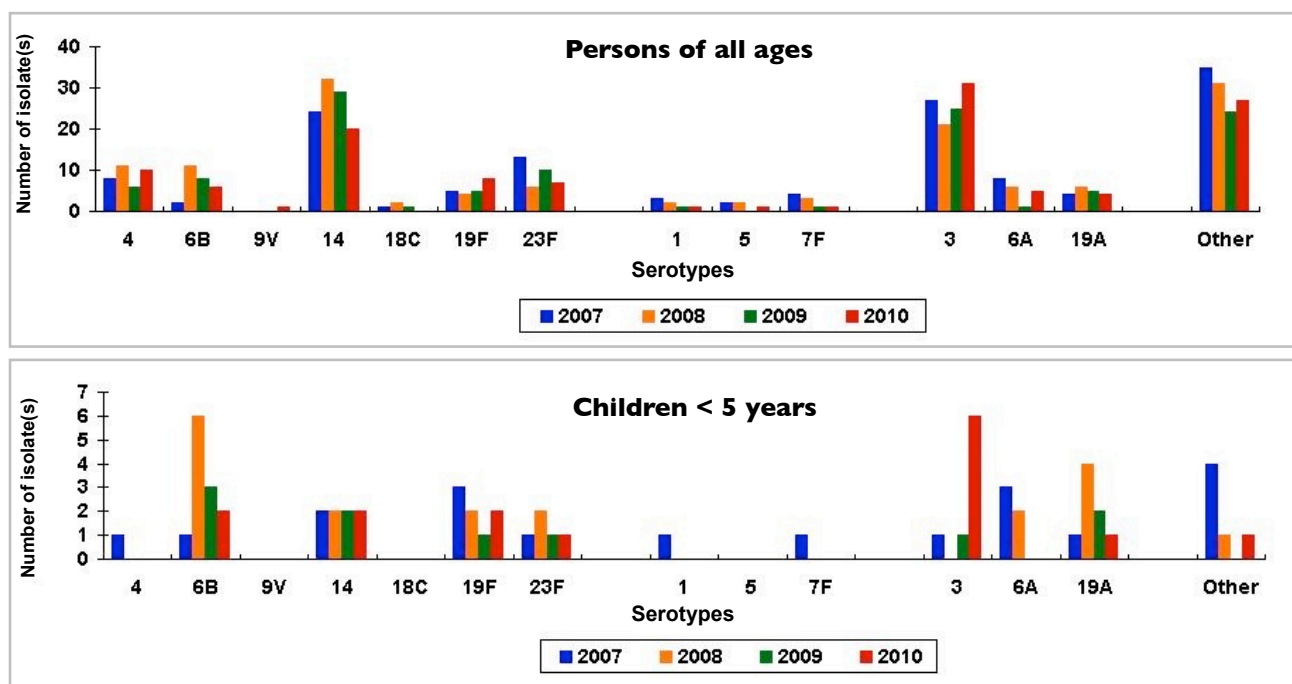


Figure 1 - Breakdown of invasive pneumococcal isolates by serotypes[§], 2007-2010.

[§] Only serotypes covered by 7-valent PCV (PCV7), 10-valent PCV (PCV10) and 13-valent PCV (PCV13) are shown. The other serotypes are grouped as "other". PCV7 covers serotypes 4, 6B, 9V, 14, 18C, 19F and 23F. PCV10 covers all serotypes in PCV7 and serotypes 1, 5 and 7F. PCV13 covers all serotypes in PCV10 and serotypes 3, 6A and 19A.

Laboratory surveillance data in 2010 shows that the difference in coverage of local circulating serotypes of pneumococci between PCV13 and that of PCV7/PCV10 is gradually becoming greater. Among children aged below 5 years with IPD in 2009, the proportion caused by serotypes covered by PCV7*, PCV10* and PCV13 were 70%, 70% and 100% respectively. In 2010, the corresponding proportion shifted to 47%, 47% and 93%. Among persons of all ages, the proportion of IPD caused by serotypes covered by PCV7*, PCV10* and PCV13 were 52%, 53% and 79% in 2009, and the figures changed to 47%, 49% and 78% respectively in 2010. This phenomenon of serotype replacement has been observed in overseas countries some time after initiation of childhood PCV programmes. The trend is expected to continue in Hong Kong if the formulation of PCV in the Childhood Immunisation Programme is to remain unchanged.

Having considered the abovementioned local IPD surveillance data, overseas experience as well as safety and immunogenicity data of PCV13, the Scientific Committee on Vaccine Preventable Diseases (SCVPD) has updated its recommendation on the use of PCV in which PCV13 is preferable over PCV10 and PCV7 for the use in Childhood Immunisation Programme of Hong Kong. The full recommendations can be accessed at

<http://www.chp.gov.hk/en/sas6/101/110/106.html>.

While pneumococcal conjugate vaccines could provide substantial coverage to common pneumococcal serotypes that caused IPD in Hong Kong, it is important to note that IPD can be caused by over 90 serotypes of pneumococci and no single vaccine can provide 100% protection to all serotypes. Members of the public, regardless of vaccination history, are advised to observe personal and environmental hygiene in order to prevent IPD.

* Assuming serotype 6B in PCV7 and PCV10 cross-protects serotype 6A

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During the ceremony, the Director-General of WHO, Dr Margaret Chan, thanked Hong Kong for her contribution to the WHO initiative. She appealed for immediate global action to fight against antimicrobial resistance.

In the keynote lecture entitled "Coping in the World without Antibiotics", world renowned expert Professor Herman Goossens from the University of Antwerp, Belgium shared with local healthcare professionals the latest international developments in evidence-based infection control practices. Professor Goossens has led the most successful national campaign on antibiotics in Europe.

A case of listeriosis

On April 1, 2011, CHP recorded a case of listeriosis affecting a 33-year-old pregnant woman who lived in Mainland China. She developed fever and chills, myalgia, headache and abdominal pain on March 24 at 15 weeks of gestation. She came to Hong Kong on March 28 and was admitted to a public hospital on

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March 29. She received intravenous antibiotics since admission. Her blood taken on admission subsequently grew *Listeria monocytogenes*. She has been discharged and was now in stable condition. All of her household contacts were asymptomatic.

A case of acute Q fever

On April 1, 2011, CHP recorded a case of acute Q fever infection affecting a 41-year-old gentleman. He had fever, headache and myalgia since March 6. He was admitted to a public hospital on March 13 for persistent symptoms. Antibiotic treatment was given and he was discharged on March 21. Paired sera taken on March 15 (day 10 of symptoms onset) and March 22 (day 17 of symptoms onset) subsequently showed more than four-fold increase in antibody titre for Phase 2 *Coxiella burnetii* by polyvalent immunofluorescence assay confirming the diagnosis of acute Q fever. His co-workers and family members are asymptomatic. Investigation is ongoing.

A case of *Streptococcus suis* infection

On April 9, 2011, CHP recorded a case of *Streptococcus suis* infection affecting an 80-year-old man with good past health. He had fever, headache and dizziness since April 4. He developed confusion on April 7, and was admitted to a public hospital on the same day. He was diagnosed to have meningitis. *Streptococcus suis* was isolated from his cerebrospinal fluid and blood. He was treated with intravenous antibiotics and remained in stable condition. He had handled raw pork at home without using gloves prior to onset of symptoms. He had no recent travel history. His home contacts were asymptomatic.

The first Vaccination Week in the Western Pacific Region

Reported by DR ALLEN CW CHAN, Senior Medical Officer, Vaccine Preventable Disease Office, Surveillance and Epidemiology Branch, CHP.

Building on the success of global smallpox eradication, the World Health Organization (WHO) launched its Expanded Programme for Immunization (EPI) in 1974, with the goal to ensure that all children in all countries benefit from life-saving vaccines including bacillus Calmette-Guérin (BCG), diphtheria-tetanus-pertussis (DTP), measles, and polio. This year, the WHO's Western Pacific Regional Office (WPRO) will hold the first Vaccination Week in the region from April 24 to May 1, 2011, an event to highlight the importance of protecting infants from vaccine-preventable diseases and celebrate the achievements of immunization programs and their partners in promoting healthy communities.

In Hong Kong, immunisation against various infectious diseases for infants and children has been introduced since 1950s. The current Childhood Immunisation Programme (CIP) comprises vaccines against ten diseases, namely, diphtheria, hepatitis B, measles, mumps, pertussis (whooping cough), poliomyelitis, invasive pneumococcal disease, rubella, tetanus, and tuberculosis. Table 1 shows the immunization schedule of CIP.

Table 1 - Hong Kong Childhood Immunisation Programme.

Age	Immunisation
Newborn	B.C.G. Vaccine HBV Vaccine - First Dose
1 month	HBV Vaccine - Second Dose
2 months	DTaP-IPV Vaccine - First Dose Pneumococcal Conjugate Vaccine - First Dose
4 months	DTaP-IPV Vaccine - Second Dose Pneumococcal Vaccine - Second Dose
6 months	DTaP-IPV Vaccine - Third Dose HBV Vaccine - Third Dose Pneumococcal Conjugate Vaccine - Third Dose
1 year	MMR Vaccine - First Dose Pneumococcal Conjugate Vaccine - Booster
1 ½ years	DTaP-IPV Vaccine - Booster Dose
Primary 1	MMR Vaccine - Second Dose DTaP-IPV Vaccine - Booster Dose
Primary 6	dTap-IPV Vaccine - Booster Dose

HBV: Viral Hepatitis B

DTaP-IPV : Diphtheria, Tetanus, acellular Pertussis & Inactivated Poliovirus

dTap-IPV : Diphtheria, Tetanus, acellular Pertussis (reduced dose) & Inactivated Poliovirus

MMR : Measles, Mumps & Rubella

The Department of Health (DH) provides free vaccines under CIP to eligible children under the age of six years at Maternal and Child Health Centres. For primary school students, the School Immunisation Teams of DH visit all the primary schools in Hong Kong to provide free vaccinations to primary 1 and 6 students. In 2009, the coverage of various vaccines including measles, mumps and rubella, diphtheria, tetanus, acellular pertussis, and inactivated poliomyelitis, and hepatitis B vaccines in primary 1 and 6 students were above 98%.

In addition, the Department of Health conducts a regular survey to estimate vaccine coverage of children aged 2 to 5 years. The survey in 2009 showed that the overall vaccination coverage rates of the vaccines covered by CIP remained high (>98%).

Immunisation remains one of the most effective public health interventions in reducing morbidity and mortality caused by infectious diseases. Ensuring high vaccination coverage of vaccines is a critical key to success of immunisation programme. DH will continue to work with different stakeholders to ensure high vaccination coverage and protect public health.

Increase in scarlet fever cases during January-April 2011 in Hong Kong

Reported by DR MICHAEL CK LAU, Medical Officer and DR ALBERT KW AU, Senior Medical Officer Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

Scarlet fever is a bacterial infection caused by Group A *Streptococcus* and is a statutorily notifiable disease. The main symptoms are fever, sore throat and erythematous skin rash with sand-paper texture. The tongue may appear red and swollen (known as strawberry tongue). Scarlet fever can be treated by antibiotics effectively. This article reviews the local epidemiology of scarlet fever in Hong Kong.

During 2006 to 2011 (up to April 16), there were a total of 1,143 cases of scarlet fever recorded by the Centre for Health Protection (CHP). From 2006 to 2010, the annual number of cases ranged between 128 and 235 (Figure 1). Relatively more cases (63%) occurred from December to May (Figure 2), though this seasonal pattern might not be seen every year. Among the 1,143 cases recorded from 2006 to 2011 (up to April 16), more males were affected than females with a male to female ratio of 1.6 to 1. Their age ranged from 1 month

to 40 years (median: 6 years). Most cases (90%) affected children under 10 years. About 60% required hospitalisation. No fatal case was reported. Every year, there were a number of small clusters occurring in domestic, institutional or school settings, with each involving two to six cases.

In 2011 (during January 1 through April 16), 139 cases of scarlet fever were recorded, which is higher than similar periods in 2006-2010. There were 11 cases in the week ending April 2, 15 cases in the week ending April 9, and 20 cases in the week ending April 16. Five clusters have occurred so far in 2011, involving three domestic and two school clusters, each affecting two to six persons. During the month of April (as of April 16), there were one domestic cluster involving two siblings and one school cluster involving six students (3 to 5 year-old boys) in a nursery school in Kwun Tong. Among the 139 cases recorded this year (up to April 16), 92 (66%) cases were confirmed by laboratory test while the remaining 47 cases (34%) were clinically suspected cases without laboratory confirmation. Age of these cases ranged from 1 month to 16 years (median: 6 years). There has been no fatal case.

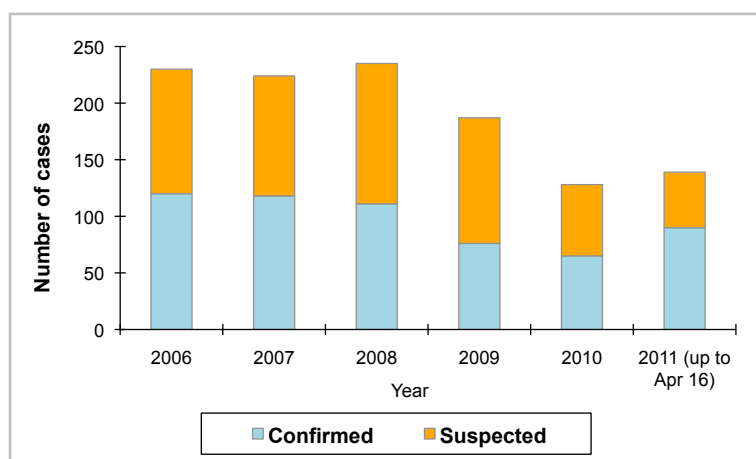


Figure 1 - Number of cases of scarlet fever, 2006-2011 (up to April 16).

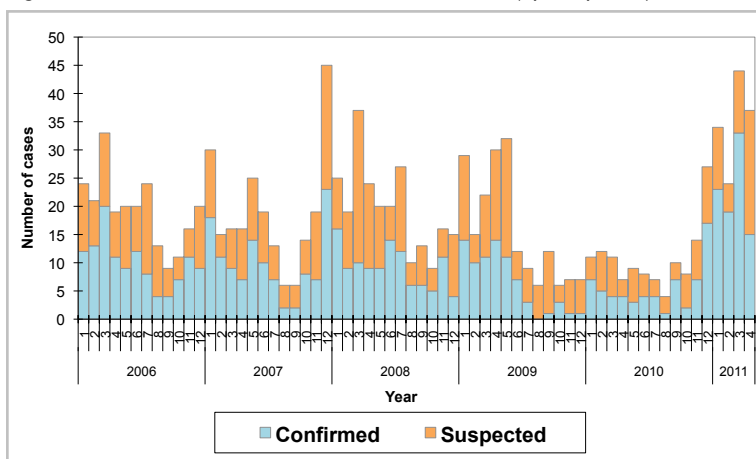


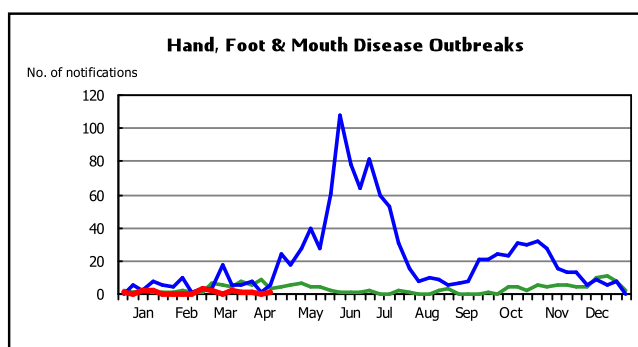
Figure 2 - Number of cases of scarlet fever by month, 2006-2011 (up to April 16).

People who are suspected to have scarlet fever should consult their doctor promptly. Patients who are suffering from scarlet fever should not go to schools or child care centres until they fully recover. To prevent scarlet fever, people should:

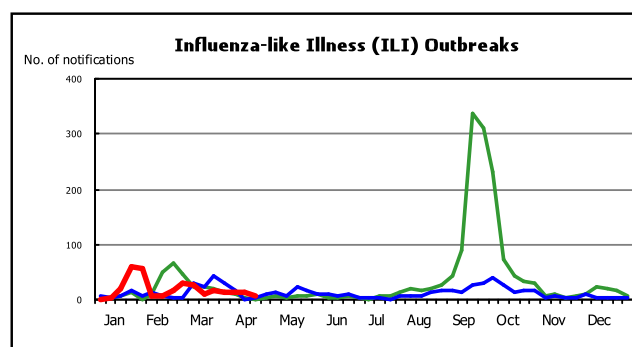
- ☒ Maintain good personal and environmental hygiene;
- ☒ Keep hands clean and wash hands properly;
- ☒ Wash hands when they are dirtied by respiratory secretions, e.g., after sneezing;
- ☒ Cover nose and mouth while sneezing or coughing and dispose of nasal and mouth discharge properly; and
- ☒ Maintain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

SUMMARY OF SELECTED NOTIFIABLE DISEASES AND OUTBREAK NOTIFICATIONS (WEEK 15 - WEEK 16)

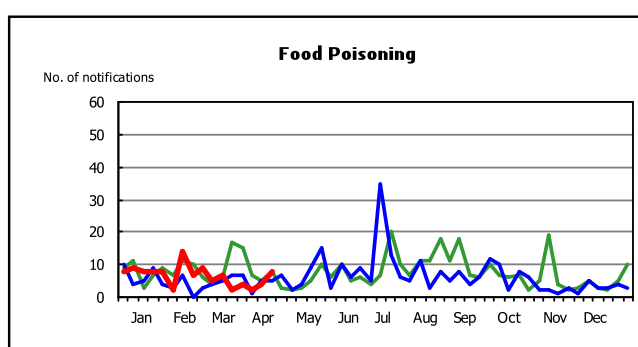
— 2009 — 2010 — 2011



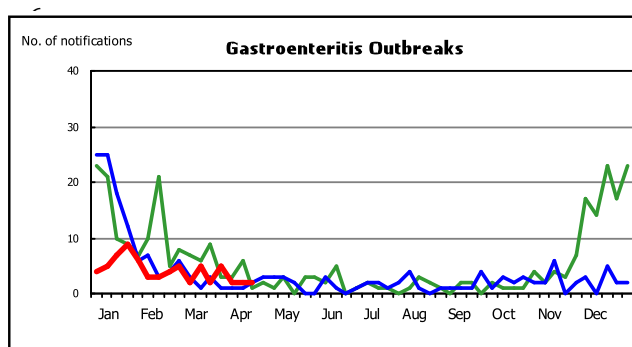
Week 13: 1 Week 15: 0
Week 14: 1 Week 16: 1



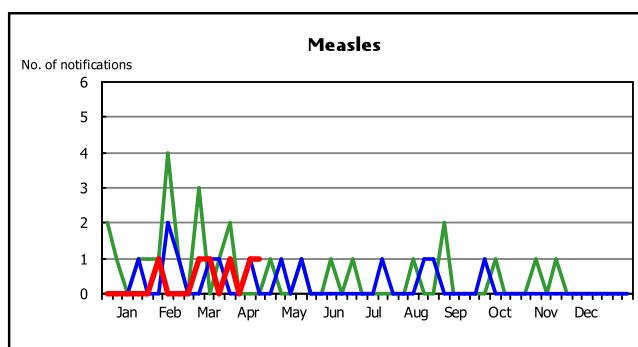
Week 13: 13 Week 15: 13
Week 14: 13 Week 16: 5



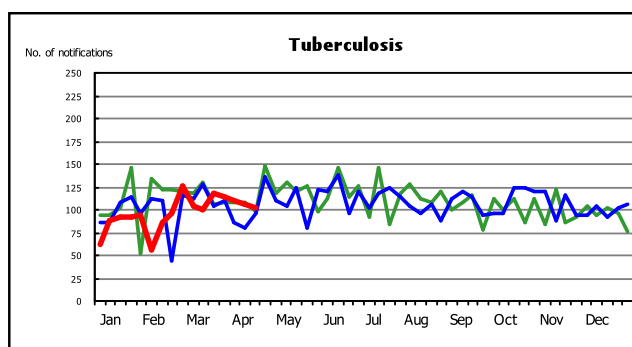
Week 13: 4 Week 15: 4
Week 14: 2 Week 16: 8



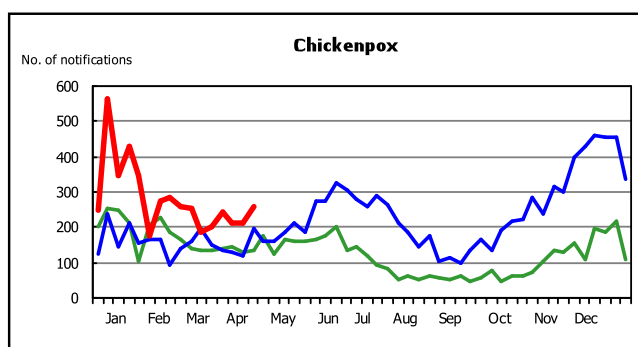
Week 13: 5 Week 15: 2
Week 14: 2 Week 16: 2



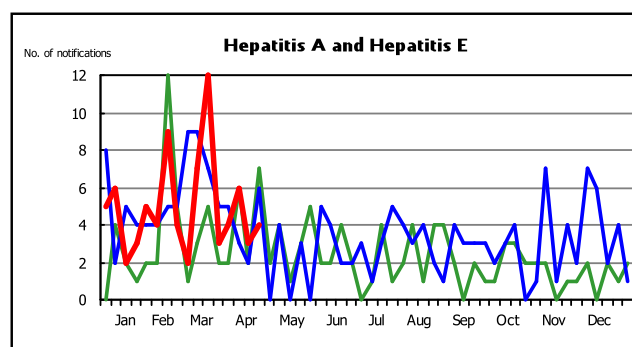
Week 13: 1 Week 15: 1
Week 14: 0 Week 16: 1



Week 13: 115 Week 15: 106
Week 14: 111 Week 16: 102



Week 13: 241 Week 15: 212
Week 14: 212 Week 16: 260



Week 13: 4 Week 15: 3
Week 14: 6 Week 16: 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 Apr 16, 2011. This information may be updated over time and should therefore be regarded as provisional only.