

COMMUNICABLE DISEASES

For general practitioners and practice nurses

H1N1-09 Pandemic Observations

1. USA

Edited from CIDRAP News 23 April 2010 (Centre for Infectious Disease Research and Policy, University of Minnesota). The observations are also applicable to most countries that were affected by the pandemic including New Zealand.

- The pandemic reinforced that influenza can be unpredictable: H1N1-09 was first detected in North America, not Southeast Asia, the pandemic virus was not a new subtype, but rather an H1N1 strain and at the time the pandemic virus made seasonal influenza viruses seemingly vanish.

Epidemiology

- Unlike seasonal influenza, the illness affected children and non-elderly adults much more than people over 65. Far more children and young people died than with typical seasonal influenza, with the vast majority of deaths involving people younger than 60. [The average age of the 35 NZ deaths due to H1N1-09 was 38 years.]
- Those who had some protection against the pandemic virus were older people, who had some exposure in the 1930s - 1950s.
- In life-years lost, the pandemic was at least as severe as a serious influenza season.
- Racial and ethnic minorities were more susceptible to severe H1N1-09 illness for various reasons.

Clinically

- There were fewer bacterial co-infections than expected.
- There was a higher-than-expected rate of gastrointestinal problems.
- Early antiviral treatment was beneficial for patients with severe illness or at risk for severe illness.
- Viral excretion in some children was three times longer than seasonal influenza.
- Morbid obesity was identified as a risk

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factor for severe illness and death.

- The pandemic reinforced that pregnant (and post-partum) women were at risk. (The 1918 pandemic also took a heavy toll on pregnant women).
- Other risk factors for serious H1N1-09 infection included asthma and, particularly in children, neurologic disorders, both of which are also seen in seasonal flu.
- Some seriously ill patients showed signs of suffering a 'cytokine storm' - an overly intense immune response that causes complications. (This is believed to have been a common feature in fatal cases in the 1918 pandemic).
- Intensive care units (ICUs) were overloaded.

2. New Zealand

Edited from a Science Media Centre interview with Sue Huang, ESR virologist 21 April 2010.

- ESR's sentinel GP surveillance showed that about 2.7% of New Zealanders (116,335) had influenza-like illness (ILI) resulting in a visit to a GP.
- Children aged 0-19 years had the highest disease burden.

- The ILI activity in 2009 was the highest since 1996.
- The number hospitalised (1,014) was the highest since 1990 with the second highest being 552 in 2003.
- 119 patients were admitted to ICU, much higher than other years. The improved hospital care in the modern era, in particular ICU care, may have saved many patients' lives.
- The 2009 pandemic was similar to the 1957/1968 pandemics and, compared to seasonal influenza over the past 18 years, it was severe.

2010 Influenza

Surveillance: The enhanced influenza surveillance that was instituted last year for the first wave of the pandemic has been continued. The percentages of the practice populations in the C&PH region covered by the sentinel practices are: Canterbury 19%, South Canterbury 27% and West Coast 74%. This year's influenza season is expected to be a mixture of the pandemic strain and seasonal influenza. The latest surveillance results are posted on the Canterbury Primary Pandemic Group website for those who have access to it.

From Guidance On The Diagnosis And Management Of Pandemic Influenza. No. 5, Ministry of Health 19 April 2010

Diagnosis and Testing: Influenza-like illness is defined (by the Ministry in this document) as (i) a history of fever, chills and sweating or clinically documented fever $\geq 38^{\circ}\text{C}$, plus (ii) cough or sore throat. A PCR should only be done if the result is required for management.

Antivirals: Antiviral treatment should be based on clinical judgement. It should especially be considered:

- early for patients with influenza who are at higher risk of severe outcomes, including pregnant women or recently pregnant women, people with underlying medical conditions, very young children (under 5), and people with morbid obesity;
- or for patients with more severe influenza or whose condition begins to deteriorate.

For the 2010 influenza season, persons

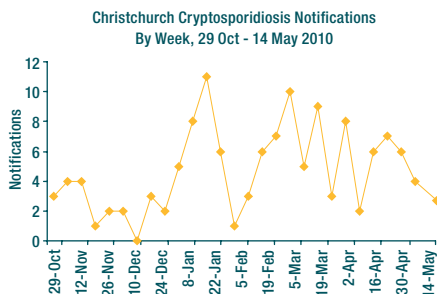
eligible to receive antivirals from the national reserve stockpile are:

- people with influenza illness who are clinically assessed as requiring antivirals on prescription by an authorised prescriber (or in accordance with standing orders issued by an authorised prescriber)
- people with influenza illness who are admitted to hospital
- some people who are contacts of influenza illness, based on clinical judgement
- for public health purposes, as approved by the Medical Officer of Health, including control of outbreaks in high-risk settings.

Cryptosporidiosis Outbreak

The Canterbury region, and Christchurch in particular, had an unseasonal increase in cryptosporidiosis notifications in January-February which continued into April (Fig. 1). By the end of April 103 notifications had been received from the Christchurch metropolitan area compared with about 18 usually.

Figure 1



Initial analyses revealed no obvious point source; no water distribution zone was implicated. The disease predominantly affected children 1-14 years and adults 30-39 years old and one case was hospitalised. A number of cases in Christchurch had swum at public pools which were possibly acting as a amplifier of the disease. There was no correlation with rainfall.

A case-control study identified statistically significant risk exposures including drinking unboiled water (outside of Christchurch), contact with nappies, and travel outside of Christchurch during the incubation period. Exposure to swimming pools was not able to

be confirmed as a risk because of the method by which the control group information was obtained.

Advice was given to individual cases on personal hygiene and the importance of keeping away from pools for two weeks after becoming asymptomatic. This message was highlighted in media releases and a fax advisory to general practitioners. Signage at the City Council pools was reviewed.

The adverse health and social impact through the debilitating symptoms of profuse watery diarrhoea requiring time off work and school, with both children and caregivers affected, was significant if not severe. The protracted nature of this outbreak indicated how difficult it is to control a cryptosporidiosis outbreak once it is widely dispersed in the community.

Non Toxigenic *C. diphtheriae*

In the past quarter two patients, one from Canterbury and one from South Canterbury were notified with suspected cutaneous diphtheria. They had visited the Pacific and shortly before returning had sustained relatively minor scratches to their legs. The lesions became infected, subsequently ulcerated and swabs identified *Corynebacterium diphtheriae*. Neither was toxigenic.

Although a skin lesion caused by a non toxigenic strain is not notifiable, because there is a delay of 1-2 weeks before the typing is fully known, these cases are sometimes reported. These strains rarely produce a membranous pharyngitis but can cause infective endocarditis. Cutaneous diphtheria caused by toxigenic *C. diphtheriae* can spread as pharyngeal diphtheria via contact with contaminated skin or articles soiled by discharges.

The last case of diphtheria notified in New Zealand was in 1988. The most recent toxigenic isolate was in 2002 from a hip aspirate from a fully immunised boy who had no toxin related symptoms.

Giardiasis Increase

In the first seven weeks of this year there was an increase in giardiasis notifications in Canterbury. Investigations revealed that the major risk factors were household spread, overseas travel, contact with animals and

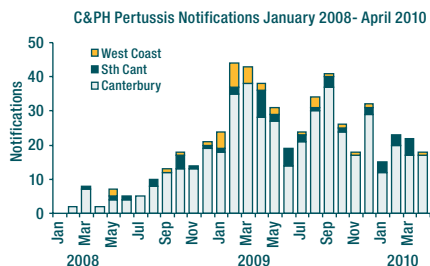
camping over the holiday period. At one point there were seven household outbreaks each with at least three cases of giardiasis.

This highlights the infectivity of giardia within a confined setting and the importance of hygiene to prevent further spread. Children should not share bath water. When one person is infected in a household there may be others who are also infected including asymptomatic carriers.

Pertussis Update

After an increase in 2008 in Canterbury and South Canterbury, pertussis notifications in these districts have continued to be elevated (Fig. 2). In 2009 West Coast had more notifications (29) than South Canterbury (27) (although having only 58% of the population) but has had only one so far this year.

Figure 2



Kaikoura outbreak: Kaikoura which had one pertussis notification in 2008 and none in 2009, had six in April. Cases have been centred around the High school with five aged 16-17 years. An infant in a preschool was also notified. Incomplete immunisation may have contributed to this outbreak. Unless the dTap booster is given at 11 years (National Childhood Immunisation programme), pertussis antibodies from vaccination are waning by early teenage years.

Doctors are reminded that the best protection against pertussis is on-time immunisation. Health care workers should be offered a single booster of dTap.

The usual indications for chemoprophylaxis for close contacts include those who are under one year of age, those who have contact with under ones, women in the last 3 weeks of pregnancy and contacts who have moderate-severe asthma, congenital

heart disease or immunodeficiency. The antibiotic should be commenced within 21 days (preferably 14 days) of onset of cough in the index case. Give 7 days of erythromycin, azithromycin, clarithromycin or co-trimoxazole. Azithromycin is the preferred antibiotic for infants less than 1 month old. Infants must be kept under observation and monitored (preferably in hospital) while on treatment with any of these drugs.

Hepatitis A And Fiji

Since 2005, of the 20 cases of travel associated hepatitis A notified in the C&PH region, eight (40%) had visited Fiji. Travel health preparations to countries where hepatitis A is endemic should include immunisation and an understanding of the risk exposures. A survey in Australia indicated that more than half of the people going overseas unfortunately did not seek health advice before they went.

Summary Of Selected Notifiable Diseases By District Health Board January - March 2010 and 2009

	Canterbury		South Canterbury		West Coast		TOTALS	
	Cases Jan-Mar 2010	Cases Jan-Mar 2009	Cases Jan-Mar 2010	Cases Jan-Mar 2009	Cases Jan-Mar 2010	Cases Jan-Mar 2009	Cases Jan-Mar 2010	Cases Jan-Mar 2009
ENTERIC DISEASES								
Campylobacteriosis	258	145	31	33	22	8	311	186
Cryptosporidiosis	104	19	3	1	4	-	111	20
Gastroenteritis	3	21	-	-	-	-	3	21
Giardiasis	72	51	3	4	5	4	80	59
Hepatitis A	1	1	-	-	-	-	1	1
Listeriosis	-	1	-	-	-	-	-	1
Paratyphoid	1	1	-	-	-	-	1	1
Salmonellosis	51	48	13	18	1	3	65	69
Shigellosis	4	6	1	1	-	-	5	7
Typhoid	-	1	-	-	-	-	-	1
VTEC	10	3	-	-	-	1	10	4
Yersiniosis	11	28	1	3	3	1	15	32
OTHER DISEASES								
AIDS	-	-	-	-	-	-	-	-
Dengue Fever	2	3	-	-	-	-	2	3
Haemophilus influenzae b	1	-	-	-	-	-	1	-
Hepatitis B	2	3	-	-	-	-	2	3
Hepatitis C	-	4	-	-	-	-	-	4
Influenza A H1N1 09	-	-	-	-	-	-	-	-
Lead absorption	5	4	5	-	-	-	10	4
Legionellosis	7	4	1	1	2	1	10	6
Leptospirosis	5	1	0	1	2	2	7	4
Listeriosis -perinatal	-	1	-	-	-	-	-	1
Malaria	4	3	-	-	-	1	4	4
Measles	-	1	-	-	-	-	-	1
Meningococcal Disease	4	2	-	-	-	-	4	2
Mumps	1	-	-	-	-	-	1	-
Pertussis	49	90	11	3	-	17	60	110
Pneumococcal Invasive Dis.	2	-	-	1	-	-	2	1
Rubella	-	-	-	-	-	-	-	-
Toxic shellfish poisoning	1	-	-	-	-	-	1	-
Tuberculosis (new case)	5	8	2	-	-	-	7	8