Regional Public Health
Better Health For The Greater Wellington Region

PUBLIC HEALTH POST

Public Health for Primary Care in Wellington, Wairarapa and the Hutt Valley

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PERTUSSIS IN HEALTH WORKERS

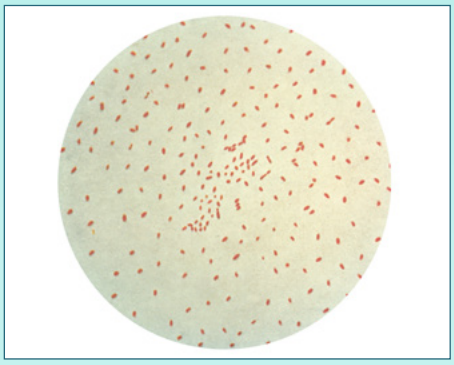

Photo courtesy of CDC: Gram-stained photomicrograph of Bordetella pertussis bacteria

Two Wellington region hospital midwives tested positive for pertussis in May 2013, triggering a public health intervention. The primary goal of public health follow-up is to protect infants, pregnant women, and people at high risk of severe or complicated illness [1].

The District Health Board occupational health units, maternity and paediatric services responded to the cases with Regional Public Health having an advisory role.

For the two cases together:

- At least 36 staff were identified as contacts.
  - More than 20 staff were advised to take prophylactic antibiotics.
- 12 patients were identified as direct contacts.
  - 7 babies and 3 adult patients were advised to have prophylactic antibiotics.
- The vaccination status of each contact was checked and vaccinations were offered to those not recently immunised.

Testing

One of the midwives had earlier been to her general practitioner and reportedly asked for a test for pertussis. She was advised that this was not needed. Clinically this may have been appropriate advice at the time. However, general practitioners should have a low index of suspicion for ordering a pertussis PCR swab for symptomatic people in high risk groups. Early diagnosis, treatment and exclusion from relevant activities may prevent the spread of infection.

Pertussis testing is most important in the following situations:

- Young babies <12 months of age, especially if partial or no immunisation.
- Pregnant women, especially in the last trimester.
- Where there are at risk people in a patient's household such as a baby <12 months or a pregnant woman in the last trimester.
- People who work at early childhood education centres.
- Healthcare workers including midwives.
- Children who attend an early childhood education centre.

Vaccination

A dose of Tdap (Tetanus, diphtheria and acellular pertussis booster vaccine) within the last 10 years reduces the risk of developing pertussis infection. Boosters are offered and recommended by the occupational health units at Hutt and Wellington hospitals. N.B. It is no longer necessary to have a 2 year gap since administration of a previous Tetanus containing vaccine.

Vaccine acronyms decoded:

- Tdap: Booster vaccine (or primary course in adults) with lower doses of pertussis antigen, tetanus and diphtheria toxoids, e.g. Boostrix®, Adacel®
- DTap: Primary course vaccine with higher doses of tetanus and diphtheria toxoids, and pertussis antigen e.g. as part of Infanrix vaccines[2]

Tdap is recommended and funded by the New Zealand Ministry of Health for:

- Children aged 4 and 11 years old (funded on the national childhood schedule)
- Pregnant women

Tdap is recommended but not funded by the New Zealand Ministry of Health for:

- Lead maternity carers and other health care personnel who work in neonatal units (a booster dose every 10 years).
- Health care workers who have contact with infants, especially infants with respiratory, cardiac, neurological or other co-morbid conditions (a booster dose every 10 years).
- Early childhood service personnel (a booster dose every 10 years).
- Household contacts of newborns.
- Postnatal women.
- Other people at higher risk of severe disease (such as underlying chronic respiratory conditions, congenital heart disease or immunodeficiency) [2, 5]

Employers may choose to fund staff booster vaccinations for pertussis.

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Key messages for Midwives, General Practitioners and other health workers:

1. **If you have contact with people who are vulnerable to the effects of pertussis infection then a booster dose of Tdap is strongly advised if you have not had one within the last 10 years.**
2. **Not being vaccinated can have a major impact on your colleagues and patients if you contract pertussis infection.**
3. **General practitioners should have a low index of suspicion for testing people who have occupational or social contact with people who are vulnerable to pertussis, as well as for those people who are themselves vulnerable to pertussis.**

Sources:

1. NZ Ministry of Health. Communicable Disease Control Manual 2012.
2. NZ Ministry of Health. Immunisation Handbook 2011
3. Capital and Coast DHB Infection Control / Occupational Health
4. Regional Public Health case records
5. Public Health Alert, RPH, August 2012.
6. Public Health Alert, RPH, April 2012.
7. Pertussis image: CDC Public Health Image Library (PHIL) 1979. Photo ID#2121

WHAT ARE YOU REPORTING

Notes

- Pertussis notifications have decreased further compared to previous three monthly periods. This appears to be a sustained decrease with pertussis hospitalisation data supporting the trend.
- Cryptosporidiosis notifications have substantially risen once again. This is a trend that has also been observed in other regions of New Zealand and is under investigation as to whether a more virulent strain of cryptosporidium may be responsible, rather than any local factors such as swimming pool use or hygiene. Regardless of the strain, people swimming while infectious will increase the likelihood of ongoing community transmission.
- The case of leprosy is very unusual in our region. The Public Health Post reported in October 2012 on a case which was the 8th case in New Zealand since 1999. One further case and other contacts are under investigation which represents a significant cluster. This is being carefully investigated and relevant international connections followed up. Leprosy is not highly contagious but prolonged or close contact is thought to increase the risk of transmission. People with leprosy are considered non infectious once they have received 2-3 weeks of treatment, a far cry from 1903 when a Newtown fruiterer Mr Kim Lee was banished to Mokopuna Island off Somes island in Wellington Harbour with suspected leprosy.

Notifiable Condition	Number of cases (confirmed cases only)			
	Hutt	Wair-arapa	Welling-ton	Total
Campylobacteriosis	20	15	86	121
Cryptosporidiosis	29	4	68	101
Dengue fever	1		2	3
Gastroenteritis / food-borne intoxication	6		6	12
Giardiasis	13	5	47	65
Hepatitis B	1			1
Invasive pneumococcal disease	1	1	4	6
Lead absorption	1			1
Legionellosis	1			1
Leprosy	1			1
Leptospirosis			1	1
Measles			1	1
Meningococcal disease	1			1
Paratyphoid fever	1			1
Pertussis (additional probable cases in	15 (18)	5 (6)	24 (22)	44 (46)
Rheumatic fever - initial attack	2		1	3
Salmonellosis	4	2	13	19
Shigellosis	2		2	4
Taeniasis			1	1
Tuberculosis disease - new case	1		4	5
VTEC/STEC infection	1	1	1	3
Yersiniosis	3		14	17
TOTAL	**104**	**33**	**275**	**412**

Sources

1. ESR. Episurv database of notifiable diseases, accessed 17/6/2013.
2. Regional Public Health case notes.

HAND, FOOT AND MOUTH DISEASE - DIFFERENT ORGANISMS, DIFFERENT OUTCOMES

Since March 2013 increased numbers of Hand Foot and Mouth Disease cases have been identified in New Zealand, including in the Greater Wellington Region. Although individual cases of Hand Foot and Mouth Disease are not notifiable, there may be a need for public health support when unusual patterns of outbreaks are identified.

The severity of Hand Foot and Mouth Disease varies depending on the organism involved. In New Zealand the majority of Hand Foot and Mouth Disease is considered mild, but as seen in international reports, some organisms are associated with severe infection and a high mortality rate.

Hand Foot and Mouth Disease image: MidgleyDJ at en.wikipedia

Press releases and other web articles reveal the two sides of this infection:

Kimberley Patterson on **www.kiwifamilies.co.nz** gives an excellent summary of the usual New Zealand experience of Hand Foot and Mouth Disease:

'Hand, Foot and Mouth is a common infection among young children. This is a relatively common virus infection that is not related to the hand, foot and mouth disease that occurs in cattle.

Hand, foot and mouth disease is usually caused by the coxsackie A16 virus and generally infects children under 10 and especially preschool children.

It gives symptoms of fever followed by a sore throat and then spots inside the mouth and red blisters on the palms and soles.

The virus can also infect older children and adults, where the illness tends to be milder.

The virus is very contagious and spreads through direct contact, saliva and through faeces. Outbreaks can take place where they are large groups of children or within families

The incubation period is 3 to 7 days.

Hand, foot and mouth disease is most contagious during the first week of infection when there are spots or ulcers in the mouth. Spots in the mouth usually clear within 7 days and the rash within 10 days.'

The article goes on to describe the signs and symptoms, treatment and complications for this infection.

In contrast there are the international reports:

Hand, foot and mouth disease kills 17 in China

http://www.stuff.co.nz/world/asia/7283393/Hand-foot-and-mouth-disease-kills-17-in-China 16/07/2012

Hand, foot and mouth disease killed 17 people and infected nearly 35,000 others in China's central Hunan province in June, according to the official Xinhua news agency, quoting information supplied by local authorities.

Other media reports have put the death toll at 112…

…Officials at the provincial Centre for Disease Control and Prevention (CDC) blamed high temperatures for the surge in the disease incidence rate compared with June last year…

…Hunan provincial health department data showed that the disease killed 19 children in the province in April, the Xinhua report said.

Hand, foot and mouth disease cause of recent deaths in Cambodia – UN-backed inquiry

http://www.un.org/apps/news/story.asp?NewsID=42460 12 July 2012

A severe form of hand, foot and mouth disease (HFMD) was the cause of the majority of recent illnesses and deaths in children reported in Cambodia, according to a joint investigation by the country's Government and the United Nations released today.

…Following reports from a children's hospital of unusual numbers of illnesses and deaths among children hospitalized since April 2012, the Cambodian Ministry of Health, with support from the World Health Organization (WHO) and other partners, conducted an investigation which identified 78 cases of HFMD, 54 of which resulted in deaths…

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Hand Foot and Mouth Disease is caused by viruses from the enterovirus genus of the family Picornaviridae. Famous members of the Picornaviridae family are the polio viruses. In New Zealand the usual causative organisms of Hand Foot and Mouth Disease are coxsackieviruses.

'Hand Foot and Mouth Disease' is distinct from 'Foot and Mouth disease' which is a disease in animals caused by viruses from the aphtovirus genus of the same family Picornaviridae.

Tests performed in Auckland by Auckland Labplus and ESR have identified the predominant enterovirus responsible for the current New Zealand outbreak to be coxsackie virus A6. This is the first recorded Hand Foot and Mouth Disease outbreak associated with coxsackie A6 here. Internationally coxsackie A6 has been responsible for serious outbreaks, but severe Hand Foot and Mouth Disease outbreaks are more commonly associated with enterovirus 71 (EV71).

Adults may not be immune to coxsackie A6 because of lack of prior exposure. There may also be a more extensive rash than is usually seen with Hand Foot and Mouth Disease in New Zealand.

Regional Public Health sent out an alert and fact sheet about our current outbreak of Atypical Hand Foot and Mouth Disease on 21st June 2013, available at: **http://www.rph.org.nz/content/66427c2f-d6b3-47e1-b165-4f6047d34755.html**

Messages for Primary Care

- Management is supportive.
- Spread is by droplet or by contact with body fluids.
- Hand washing with soap and thoroughly drying the hands is protective.
- Bleach is the recommended disinfectant for surfaces, as other disinfectants (unless they are specifically indicated to kill enteroviruses or noroviruses) are not very effective.
- Cases should not attend childcare, school or work until 24 hours after the fever has gone, the blisters have dried up and no new blisters are appearing.
- To reduce spread, clean toys and surfaces with detergent, AND then disinfect by wiping with or soaking in 1:100 dilute bleach. Disinfecting toys and general surfaces such as tables is a precaution for outbreaks. In usual circumstances frequent washing with detergent is adequate.

Further links

More information on Hand Foot and Mouth Disease caused by CVA6 can be found at:

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6112a5.htm

http://wwwnc.cdc.gov/eid/article/18/10/12-0813_article.htm

Sources

1. Heymann DL. 2008. Control of Communicable Diseases Manual 19th Edition. 151 – 154
2. ESR Clinical Virology laboratory, National Centre for Biosecurity and Infectious Disease.
3. http://www.kiwifamilies.co.nz/articles/hand-foot-and-mouth/
4. http://www.stuff.co.nz/world/asia/7283393/Hand-foot-and-mouth-disease-kills-17-in-China
5. http://www.un.org/apps/news/story.asp?NewsID=42460
6. Hand Foot and Mouth disease image from Wikimedia Commons http://upload.wikimedia org/wikipedia/commons/1/16/Hand_Foot_Mouth_Disease.png

PUBLIC HEALTH ALERTS

Regional Public Health communicates public health alerts to primary care practices by fax and by email. These communications often contain information that needs to be urgently taken on board by general practitioners and primary care nurses.

Please contact Regional Public Health on 5709002 if you have not been receiving alerts, or to check and confirm that we have your correct details.

If you are not yet receiving alerts by email, and would like to, then you can provide your email address via phoning the number above.

Thank you

Ordering Pamphlets and Posters:

To order any Ministry of Health resources, please contact the Health Information Centre on 04 570 9691 or email laurina.francis@huttvalleydhb.org.nz

For enquiries regarding The Public Health Post, please contact Dr Jonathan Kennedy, Medical Officer, Regional Public Health **jonathan.kennedy@huttvalleydhb.org.nz** or by phone **04 570 9002**. Alternatively contact one of the regional Medical Officers of Health: **Dr Jill McKenzie, Dr Margot McLean, Dr Annette Nesdale and Dr Stephen Palmer**

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