



# PUBLIC HEALTH POST

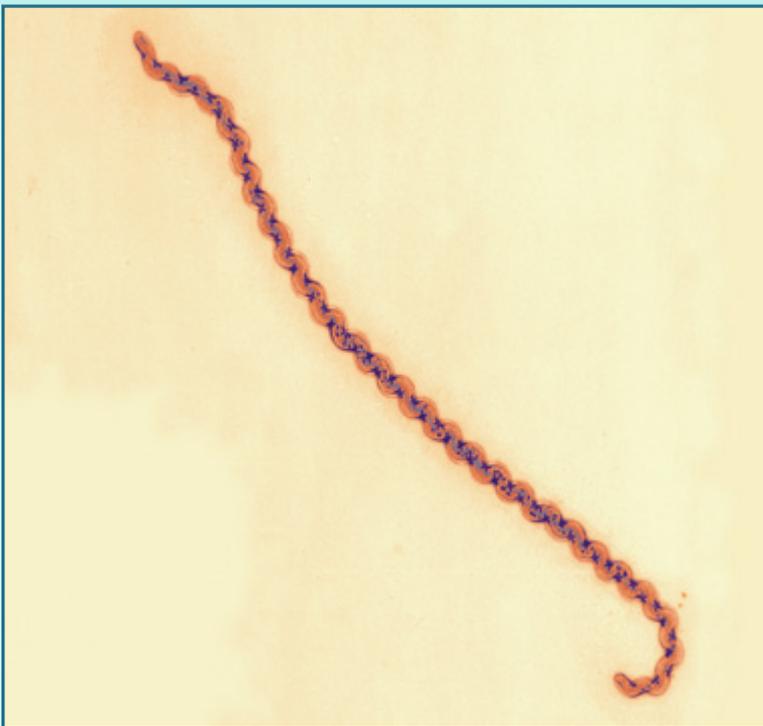
Public Health for Primary Care in Wellington, Wairarapa and the Hutt Valley

Also available online at [www.rph.org.nz](http://www.rph.org.nz)

October 2012

## LEPTOSPIROSIS RISK IN URINE AND OFFAL

Several times a year on average in the Wellington region, someone, most likely a farm or meat worker, presents to a general practitioner or hospital with symptoms that could be easily confused with influenza. They may have up to a week of high fever, muscle aches (especially in the calves and lumbar area) and headaches (often frontal and behind the eyes). They may also have red eyes, nausea, vomiting, diarrhoea, cough, photophobia or rash.



Bacteria *Leptospira* (false-color electron microscopy). Image reproduced with permission: ©Institut Pasteur M. Picardeau, E. Couture Tosi. <http://www.pasteur.fr/>

It could be influenza, but it could also be the early phase of leptospirosis. Also known as Weil's disease, Red Water Fever, Black Water Fever or Cane Cutter's disease, this can be a mild illness or may be much more severe.

Public health officers become involved once a leptospirosis case is diagnosed by clinicians and the laboratory. The role of the Public Health Unit is to investigate the possible source of the illness. If the source is likely to be a workplace then the Department of Labour (now part of the Ministry of Business, Innovation, and Employment) should be notified using the Notifiable Occupational Disease System (NODS) form. This is completed by the case. The employer also has a duty to notify the Department of Labour.

Veterinarians play an important role in the prevention of leptospirosis in humans, by diagnosing and treating farm animals and by encouraging vaccination of farm herds. Given the occupational exposure risk to leptospirosis that vets carry they are also well informed and able to advise the workers about the risk of leptospirosis exposure from the animals. A simple reminder about the need for precautions that decrease potential exposure can be very useful.

## Ongoing clinical features and risk

The acute phase of leptospirosis may be followed by a continuing phase of illness.

Features seen in the continuing phase can include ongoing fevers, jaundice, renal failure, bleeding, dyspnoea, haemoptysis, hypotension, myocarditis, meningitis, confusion and depression. Untreated, symptoms may continue for months, and sometimes result in repeated hospitalisations.

Uveitis in some cases develops up to 18 months after the original acute infection and can persist for years.

Workers most at risk are meat workers, farmers and forestry workers (Fig. 1). Meat workers are particularly vulnerable to urine splashes when handling carcasses and offal. Other people with animal contact are also at risk.

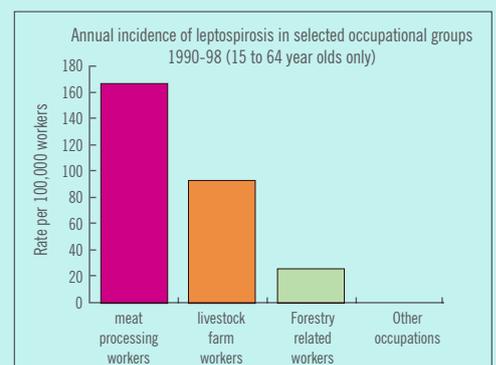


Fig. 1: Annual leptospirosis incidence by occupational group

## Transmission

Humans contract leptospirosis by having contact with infected animal urine (usually cattle, sheep, pigs, deer or rodents) or other infected tissue or fluids. The leptospira spirochete enters via cuts, other broken skin, or through the eyes, mouth or nose. The contact may be directly with the animal or via water or plants that are contaminated with leptospire. Overseas travel can be a source when there has been contact with flooded or contaminated water.

Statistics from ten years in the Wellington region illustrate the predominance of infections affecting the high risk occupation groups: Of 26 cases, ten are recorded as being farmers and five were meat workers. There was one livestock transporter, one shearer, one meat inspector and one possum hunter. 16 were from the Wairarapa, eight were from Wellington and two were from the Hutt Valley.

In the same ten year period nationally there were 929 cases with approximately 60-140 notifications per year (Fig. 4). 2012 is already looking like being a peak year with 110 cases from January to August. There were 24 reported cases in August, the highest number of monthly cases on record in the Episurv database.

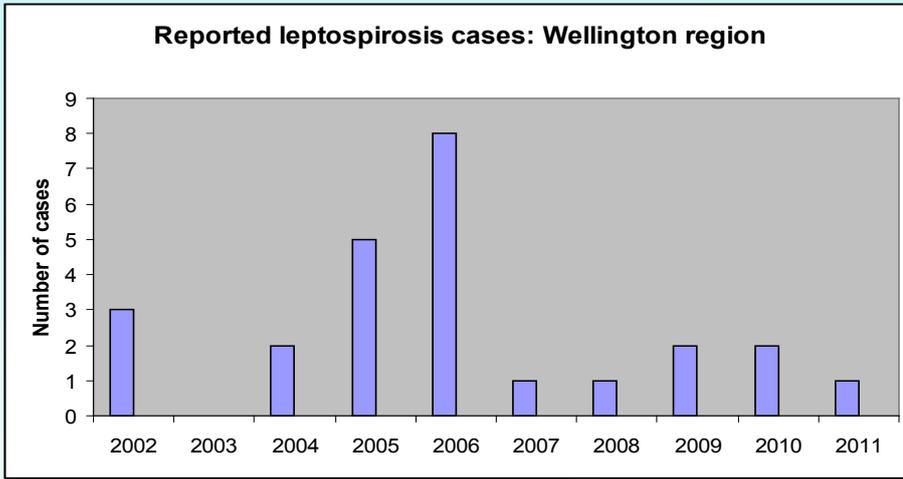


Fig. 2: Reported leptospirosis cases: Wellington Region 2002 – 2011.

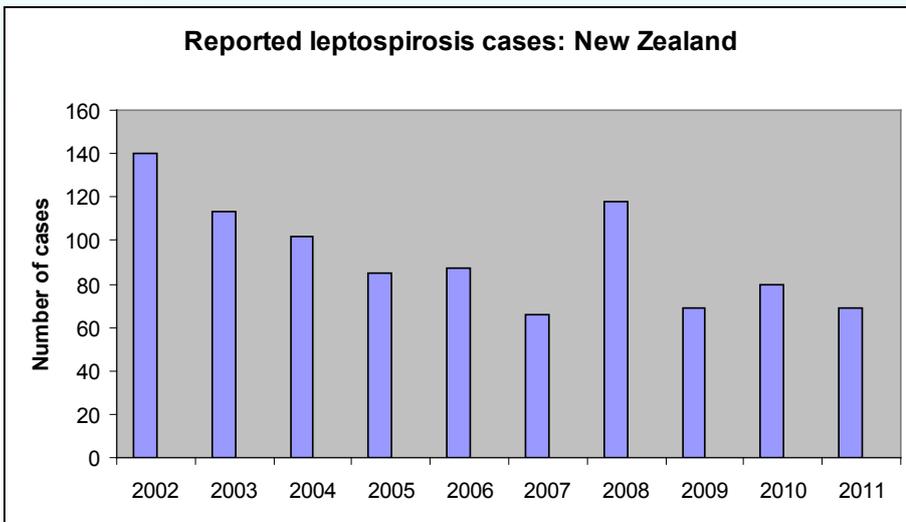


Fig. 3: Reported leptospirosis cases: New Zealand 2002 – 2011.

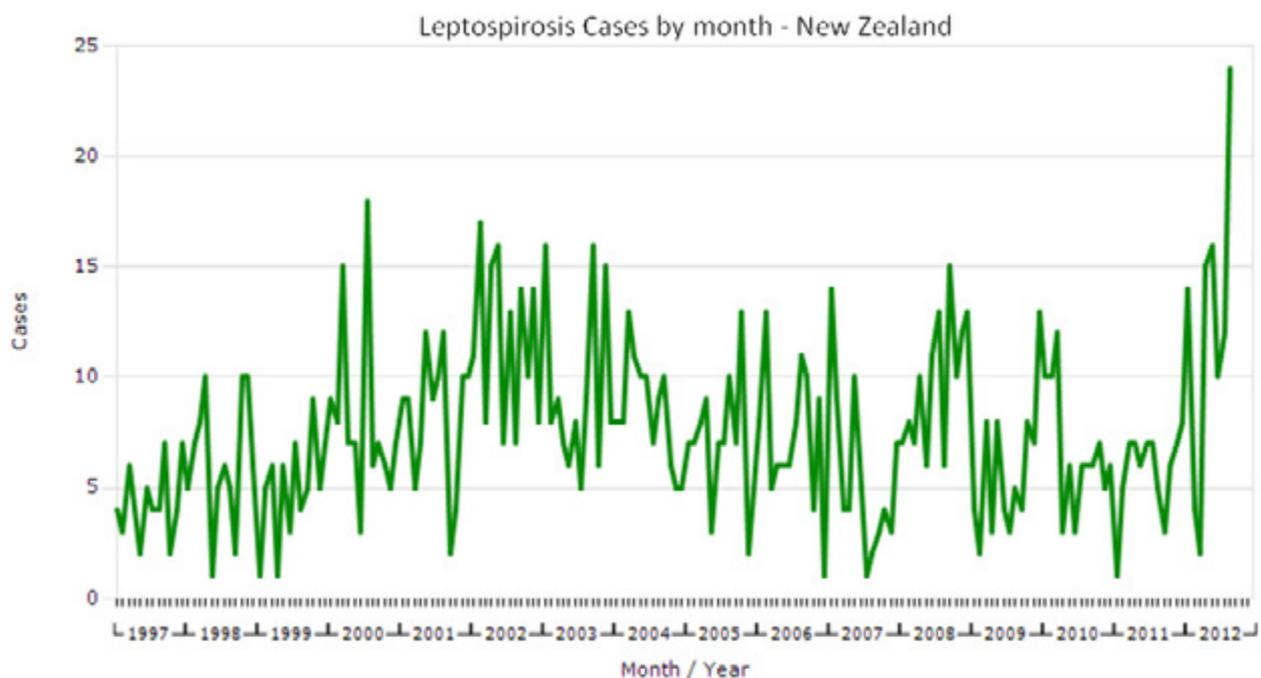


Fig. 4: Leptospirosis cases by month – New Zealand, 1997 – 2012.

## Testing and treatment

Testing for leptospirosis can be done by a microscopic agglutination test (MAT) or by PCR of blood or urine. These tests each have different advantages so consult the local laboratory as to the most appropriate test for your patient. If the illness is related to occupational exposure and the person may be eligible for ACC, check what laboratory testing ACC require.

Antibiotic treatments may be used in the management of leptospirosis: penicillins, tetracyclines and macrolides have been used. Recent evidence suggests that antibiotics have questionable effectiveness, so advice from the infectious diseases team should be sought.

Early consideration of leptospirosis as a possible diagnosis in an at-risk person is the first and most important step for doctors and nurses in primary care.

## Prevention

Workers can reduce the risk of infection by avoiding exposure in an at risk environments. Protection measures include covering cuts and abrasions and protecting the face from splashes of animal urine.

There is no human vaccine available in New Zealand, but farm animal herds can be protected from leptospirosis using a vaccination.

Workers in a high-risk industry such as meat processing, farming or stock transport or sales should be advised to obtain specific leaflets about leptospirosis from the Ministry of Business, Innovation and Employment. These are available at:  
[www.dol.govt.nz](http://www.dol.govt.nz)

## Key messages for Primary Care

- Suspect this infection in high risk groups.
- Test after discussion with the laboratory on a case by case basis.
- If tests are positive, discuss treatment with the infectious diseases team.
- Opportunistically advise high risk workers about prevention measures and where to get further information.

## Key messages for Vets

- The diagnosis and treatment of leptospirosis in farm animals and the vaccination of at risk herds by veterinarians play a very important part in the prevention of human leptospirosis infections.
- Take the opportunity to remind high risk workers of the risk of leptospirosis, and that they need to be aware of precautions to take to prevent infection.
- The work of veterinarians is greatly appreciated by public health organisations including Regional Public Health.



## Sources

1. Heymann DL. Control of Communicable Diseases Manual. 19th Ed 2008.
2. <http://www.osh.dol.govt.nz/order/catalogue/pdfs/lepto-01.pdf>
3. <http://www.osh.govt.nz/order/catalogue/742.shtm>
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5. <http://www.osh.dol.govt.nz/order/catalogue/pdf/leptospirosisguide.pdf>
6. ESR: Episurv database of notifiable conditions. Accessed 27/8/12, 24/9/2012
7. Brett-Major DM, Coldren R. Antibiotics for leptospirosis. Cochrane Database Syst Rev. 2012 Feb 15;2:CD008264.
8. <http://emedicine.medscape.com/article/220563-treatment>

## WHAT ARE YOU REPORTING?

### Three months of notifiable cases in the Hutt Valley, Wairarapa and Wellington

Notifiable Condition	Number of cases (Confirmed cases only)			
	Hutt	Wairarapa	Wellington	TOTAL
Campylobacteriosis	26	9	79	114
Cryptosporidiosis	10	4	31	45
Dengue fever	1		2	3
Gastroenteritis / foodborne intoxication	6		10	16
Giardiasis	21	3	39	63
Hepatitis A			1	1
Invasive pneumococcal disease	5	4	14	23
Lead absorption	2	1	3	6
Legionellosis	1		1	2
Leprosy			1	1
Leptospirosis		2		2
Malaria	1			1
Meningococcal disease			4	4
Mumps		1		1
Pertussis (probable in brackets)	37 (56)	10 (7)	70 (116)	117 (179)
Rheumatic fever - initial attack			4	4
Salmonellosis	5		14	19
Shigellosis			1	1
Taeniasis			1	1
Tuberculosis disease - new case	2		1	3
Typhoid fever			1	1
Yersiniosis	6	3	15	24
<b>TOTAL</b>	<b>123</b>	<b>37</b>	<b>292</b>	<b>452</b>

Fig. 5: Regional notifiable cases 1/7/2012 – 30/9/2012.

### Notes

1. Pertussis continues to be reported in high numbers.
2. Gastrointestinal infections make up a large proportion of the remaining notifications.
3. The case of leprosy is only the seventh case of leprosy in the Wellington Region since 1999. He is a 24 year old man from the Pacific islands who was referred by his GP to a general physician for swelling and numbness in his legs. Subsequent nerve conduction studies showed a patchy neuropathy and a biopsy done by the infectious diseases specialist confirmed the diagnosis. Leprosy has since been confirmed in a family member in his home country and another family contact in New Zealand is under investigation for suspicious skin lesions. Treatment and contact tracing are being managed by the infectious disease team at CCDHB and Regional Public Health.

### Sources

1. ESR. Episurv database of notifiable diseases, accessed 08/10/2012.
2. Regional Public Health case notes.

# CRYPTOSPORIDIOSIS NUMBERS DIVING

The high number of cryptosporidiosis cases in the Wellington region associated with swimming pool use have declined. More recently cases have been associated with rural exposures.

Further analysis of the recent outbreak identified that approximately 35% of the cases had links with either of two swimming pools in the region.

Regional Public Health sent out information to all regional public swimming pools and media releases were issued. Cryptosporidium risk reduction measures were checked and implemented at both of the pools that had links with the cases, with generally a good standard already found to be in place.



However, the investigating officers found that the treatment system capable of eliminating cryptosporidium at one of the pools had been off line for repairs during the mid – later part of the outbreak. The timing suggested that this was not a cause for the initial increase in cases but could have contributed to its continuation. The cleaning system was quickly brought back on line. Case numbers have since decreased across the region as illustrated by the graph below.

The underlying source for the large number of cases remains unidentified.

When there is an increased amount of cryptosporidium infection circulating in the community, swimming pools can be a source of ongoing transmission. The key to preventing this is the public messaging around hygiene and avoiding swimming during the period of highest infectivity (during the illness and for at least 2 weeks after symptoms cease).

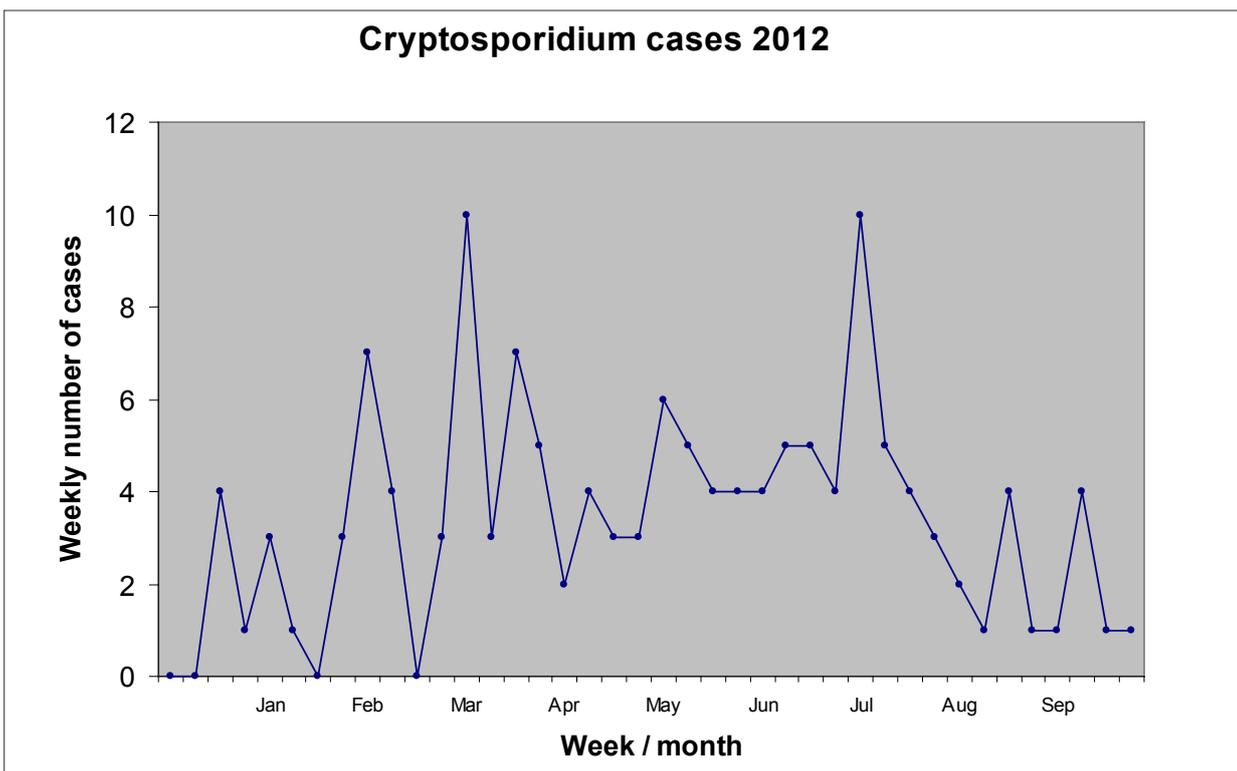


Fig. 6: Cryptosporidium cases 2012 by week

# HOSPITALISATION & DEATH WITH NOTIFIABLE CONDITIONS

Wellington Region Hospitalisations	
Notifiable Condition	Number of cases (Confirmed cases only)
Invasive pneumococcal disease	86
Campylobacteriosis	68
Non seasonal influenza A (H1N1)	40
Tuberculosis disease - new case	39
Rheumatic fever - initial attack	30
Meningococcal disease	24
Pertussis	23
Salmonellosis	23
Yersiniosis	18
Legionellosis	8
VTEC/STEC infection	8
Giardiasis	5
Leptospirosis	5
Listeriosis	4
Cryptosporidiosis	3
Gastroenteritis / foodborne intoxication	3
Dengue fever	3
Hepatitis A	3
Hepatitis B	3
Gastroenteritis - unknown cause	2
Measles	2
Shigellosis	2
Typhoid fever	2
Malaria	2
Hepatitis C	1
Rubella	1
Haemophilus influenzae type b	1
Hepatitis NOS	1
Listeriosis - perinatal	1
Toxic shellfish poisoning	1
<b>TOTAL</b>	<b>412</b>

Fig. 7: Wellington region hospitalisations with notifiable conditions.

Regional Public Health monitors the incidence of notifiable disease in the Wellington Region and responds accordingly to individual cases and to outbreaks or trends in incidence.

At the severe end of the spectrum are the notifiable conditions that contribute to hospitalisations and deaths in our region. The following tables give the number of cases over a two year period in the Wellington region, and nationally for comparison.

All of the tables give data from 1 July 2010 - 30 June 2012. Deaths and hospitalisations associated with non notifiable conditions are not included. Cases are recorded only once, even if they had multiple hospitalisations.

Note that non seasonal influenza A (H1N1) was notifiable from April 2009 to December 2010 so data is not for the full two year period for this disease

The hospitalisation data can be interpreted subjectively in a number of ways.

By ranking, Wellington is similar to New Zealand overall with invasive pneumococcal infection, campylobacter, non seasonal influenza A and tuberculosis, as the lead hospitalisation group.

These are closely followed by a group of conditions notably including pertussis, rheumatic fever and meningococcal disease.

Serious enteric infections salmonellosis, yersiniosis, and verotoxigenic Ecoli (VTEC), and legionellosis feature prominently, ahead of the stragglers which vary more regionally compared with the national rankings.

## New Zealand Hospitalisations

Notifiable Condition	Number of cases
Invasive pneumococcal disease	970
Campylobacteriosis	841
Non seasonal influenza A (H1N1)	725
Tuberculosis disease - new case	313
Pertussis	309
Rheumatic fever - initial attack	294
Legionellosis	278
Salmonellosis	245
Meningococcal disease	194
Measles	110
Leptospirosis	103
VTEC/STEC infection	97
Yersiniosis	73
Giardiasis	68
Gastroenteritis - unknown cause	58
Shigellosis	57
Malaria	51
Gastroenteritis / foodborne intoxication	49
Cryptosporidiosis	48
Typhoid fever	48
Listeriosis	36
Hepatitis A	33
Dengue fever	32
Hepatitis B	29
Rheumatic fever - recurrent attack	20
Lead absorption	13
Murine Typhus	13
Tuberculosis disease - relapse or reactivation	13
Haemophilus influenzae type b	13
Hepatitis C	10
Paratyphoid fever	10
Hazardous substances injury	7
Hepatitis NOS	6
Listeriosis - perinatal	5
Hydatid disease	4
Mumps	3
Tetanus	3
Chemical poisoning from the environment	2
Enterobacter sakazakii	2
Q fever	2
Rubella	1
Cholera	1
Toxic shellfish poisoning	1
<b>TOTAL</b>	<b>5190</b>

## Wellington Region Deaths

Notifiable Condition	Number of cases
Invasive pneumococcal disease	7
Meningococcal disease	3
Non seasonal influenza A (H1N1)	1
<b>TOTAL</b>	<b>11</b>

Fig. 9: Wellington region deaths with notifiable conditions.

## New Zealand Deaths

Notifiable Condition	Number of cases
Invasive pneumococcal disease	57
Non seasonal influenza A (H1N1)	17
Meningococcal disease	15
Legionellosis	8
Listeriosis	4
Tuberculosis disease - new case	3
Pertussis	1
Haemophilus influenzae type b	1
<b>TOTAL</b>	<b>106</b>

Fig. 10: New Zealand deaths with notifiable conditions.

Deaths from notifiable conditions are rare. Pneumococcal disease and meningococcal disease stand out especially, and in this particular time period, non seasonal influenza A.

All deaths associated with notifiable diseases or conditions should be discussed with the coroner to determine if a coroner's inquest is required.

### Source

ESR. Episurv national database of notifiable conditions. Accessed 13/8/2012

Fig. 8: New Zealand hospitalisations with notifiable conditions.

# SKIN INFECTIONS TARGETED

## Protocols released for the management of skin infections in children and young people in community and primary health care settings

Protocols and healthy skin resources were launched by Graham Dyer, Chief Executive, Hutt Valley DHB on 1st October 2012. They have been developed collaboratively and signed off by the three DHBs and all the PHOs in our sub region (Wairarapa, Hutt Valley and Capital and Coast DHBs). The aim is to promote evidence-based best practice for the prevention, assessment, management and treatment of skin infections in children and young people from 1 year to 25 years of age.

The protocols are for general practitioners, primary health care nurses, school health nurses, public health nurses and pharmacists in the sub-region – all working within their respective professional scopes of practice.

The common bacterial skin infections covered are: impetigo, boils, cellulitis, and infected human and animal bites. Other skin conditions included are insect bites, scabies, and head lice, as these can lead to significant secondary infections.

The protocols are available on the RPH website [here](#)

They can form the basis for standing orders for nurses working in primary care and in the community, and with this in mind the following training has been arranged:

Education/Training for nurses: One Day Programme. This workshop/study day - available to all nurses across CCDHB, Hutt and Wairarapa regions. It will include treatment and management protocols, practical session on assessment of children and standing orders to support the protocols.

The following dates and venues have been confirmed:

**Friday 9th November 8.30 - 5.30 Hutt Learning Centre Auditorium**

**Friday 16th November 8.30 - 5.30 Te Papa Learning Centre Kenepuru Hospital**

For more information please contact Vicky Noble at: [vicky.noble@ccdhb.org.nz](mailto:vicky.noble@ccdhb.org.nz)



Dr Adrian Gilliland, Primary Care Clinical Advisor, Capital and Coast DHB, with the skin poster children at the launch of the protocols.

### 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](mailto:laurina.francis@huttvalleydhb.org.nz)

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