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Regional Public Health
HAUORA Ā IWI KI TE ŪPOKO O TE IKA A MĀUI
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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Issue 33 - June 2018

FROM ONE WING TO THE NEXT: NOROVIRUS OUTBREAK IN AN AGED RESIDENTIAL CARE FACILITY

Tina Hong and Marie Gibson; Health Protection Officers, Regional Public Health

This article highlights some valuable learnings following an internal review conducted by the facility management after a large gastroenteritis outbreak occurred at an aged residential care (ARC) facility.

On 29th December 2017, Regional Public Health (RPH) were notified of an outbreak of gastroenteritis affecting residents and staff in an ARC facility. The facility hosts 124 residents and 110 staff and is comprised of a rest home wing, a dementia unit and two hospital wings. The outbreak affected 69 residents and staff, resulting in an attack rate of 29%. The illness had spread throughout the facility affecting all four wings. An internal review to determine possible causes that led to the spread of illness was conducted by the facility's management.

The initial notification to RPH advised that seven residents and two staff members in the Dementia Unit had experienced symptoms of gastroenteritis since 28th December. It was noted that outbreak procedures and infection control protocols had been implemented to prevent the further spread of illness and that the Dementia Unit had lockable doors meaning it could be isolated from other wings. However, residents and staff continued to become ill and by day seven of the outbreak, every wing of the facility was affected.

An epidemic curve was developed using the illness logs provided by the facility (figure 1). This information was also broken down by area identifying the location of ill residents and staff (figure 2). This data illustrated that transmission occurred from one area to another which is likely caused through the movement of staff working between locations.

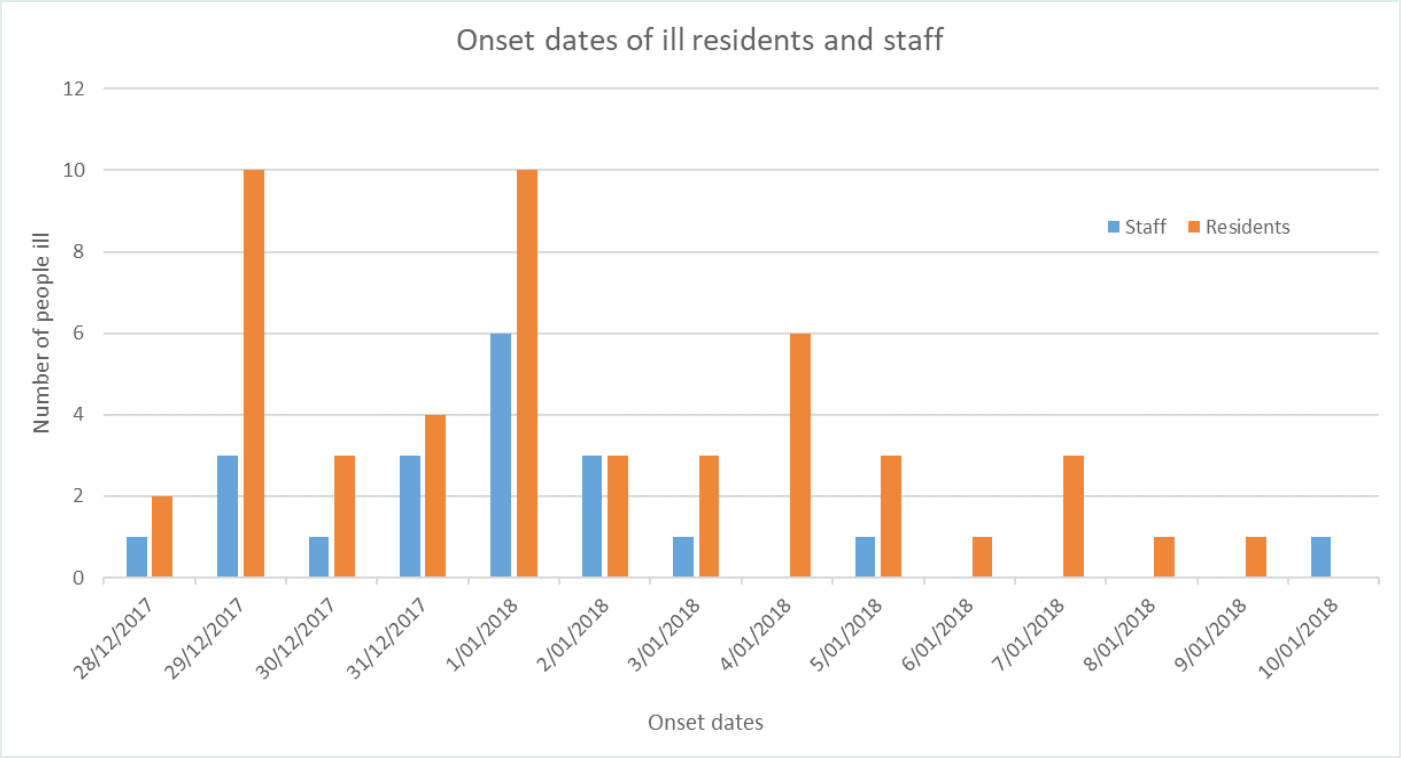


Figure 1: Epidemic curve of the onset dates of ill residents and staff

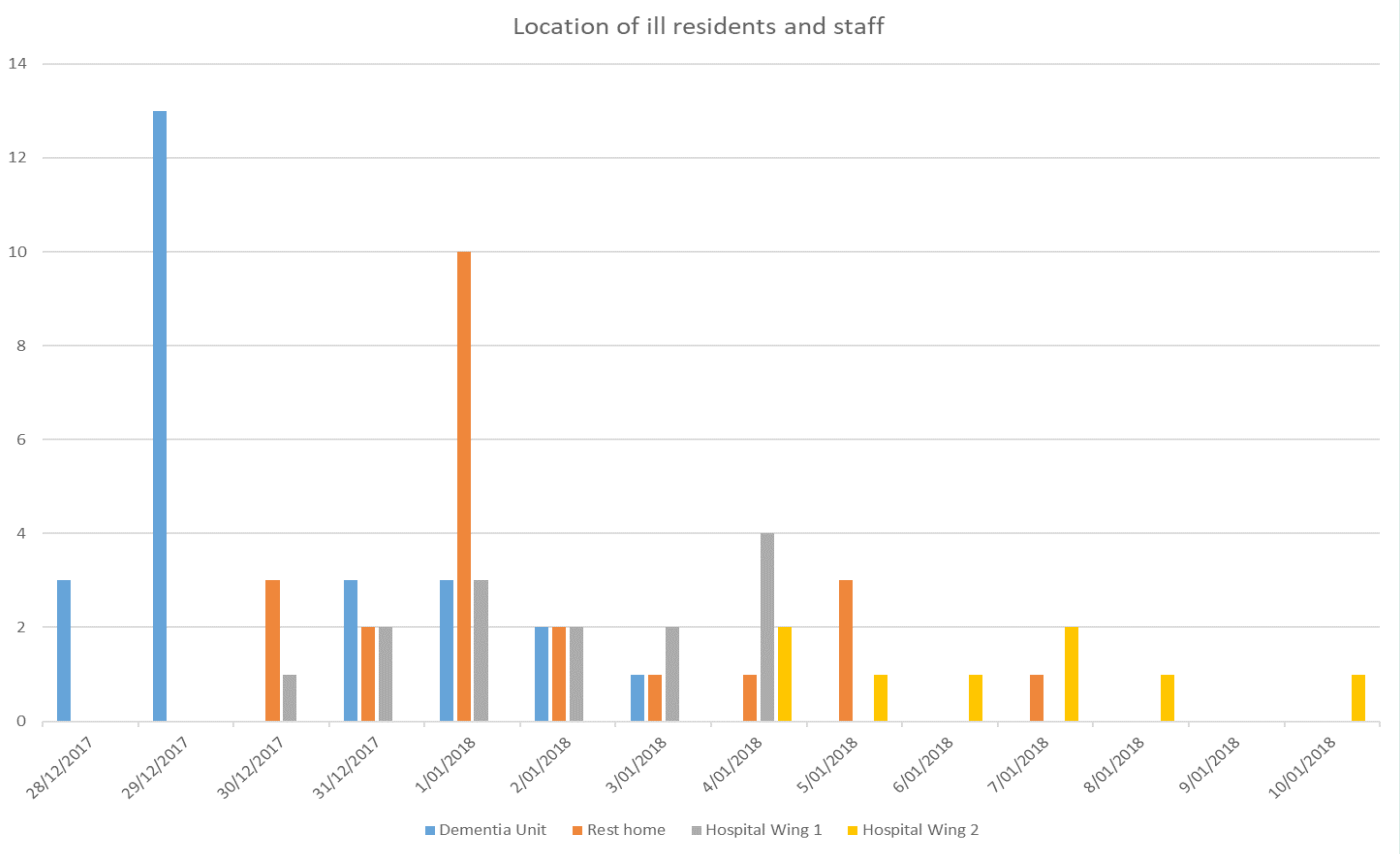


Figure 2: Location of ill residents and staff.

New cases of illness continued to be reported daily and on 8th January, a visit was organised for Health Protection Officers and an Infection Control nurse to visit the facility on the 10th January to provide further support. In conjunction with the visit, the facility management decided to undertake a review of the outbreak to understand how the outbreak spread through the facility and if any improvements could be made. Both parties shared their findings as follows:

Facility's key learnings following internal review:

- Cleaning staff were not allocated to either affected or non-affected areas and instead the same cleaning staff was used for all rooms.
- Use of PPE was inconsistent. There some confusion among staff regarding when full PPE should be worn or just a plastic apron is worn as there were differing interpretations in what was considered 'patient care'.
- Staff were unsure of the correct sequence in donning and doffing PPE. Refresher training was therefore needed.
- Better arrangements were needed for isolation where there are shared ensuite bathrooms between residents.
- Better stock rotation was recommended. It was noted that the cleaning agent had reached the end of its shelf-life when the outbreak occurred.

RPH's recommendations following observations made during site visit:

- Discontinue the use of face masks during an outbreak. Staff could be observed repeatedly touching their masks due to difficultly talking and uncomfortable temperature conditions. We advised wearing a mask continually was unnecessary as frequent touching of the mask could cause contamination and a mask should only be worn when undertaking tasks requiring personal protective equipment.
- Develop a detailed cleaning schedule identifying locations, surfaces, staff and frequency of cleaning.
- Improve entrance signage. The signage displayed at the entrance implied that the facility was in lock-down and no visitors allowed. We advised during outbreaks to provide a cautionary approach and limit visitors rather than lock-down the facility.
- Improve signage throughout the facility reminding staff, residents and visitors of the importance of good hand hygiene.

RPH works proactively with ARC facilities to continually safeguard public health during outbreaks by ensuring there are good procedures in place to reduce the transmission of illness. RPH can also assist with specimen testing and provide information and resources.

A recommended resource for ARC facilities is the **RPH Executive Summary - Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions**. This can be found at http://www.rph.org.nz/health-professionals/arc-facilities/

PUBLIC HEALTH MANAGEMENT OF STEC NOTIFICATIONS - IN TRANSITION

Dr Craig Thornley, Medical Officer of Health

STEC is the acronym for Shiga-toxin producing *Eschericha coli*, also known as verocytotoxin-producing *E. coli* (VTEC); a well-known STEC serotype is E. coli O157:H7. STEC infections can cause severe illness, including haemorrhagic colitis, and complications such as haemolytic-uraemic syndrome (HUS) and thrombocytic thrombocytopaenic purpura (TTP). Cattle and other ruminants are a reservoir for STEC bacteria, and infections occur through contact with animals or farm environments, and by ingestion of contaminated food or water.

The rate of STEC notifications has increased greatly since mid-January. This is because Wellington SCL, the community laboratory service provider for the greater Wellington region, in January commenced routine testing of community gastroenteritis faecal specimens with polymerase chain reaction (PCR) to detect genetic sequences associated with common causes of acute gastroenteritis, including STEC. PCR is recognised as being a much more sensitive test for STEC than the previous culture-based methods, hence the greater frequency of positive tests. On the laboratory result, a positive test for STEC is noted as "Shiga Toxin 1" or "Shiga Toxin 2" detected.

Along with the increased volume of STEC notifications, the spectrum of symptoms among patients with PCR-detected STEC differs from those reported prior to the change in laboratory methods. Positive tests have been returned on patients for whom STEC infection was not suspected; not infrequently, there have been positive tests returned on patients without any acute diarrhoeal illness and who were tested for other reasons.

How best to approach the 'new normal' for positive STEC laboratory results is under review across New Zealand. The interim approach being used by Regional Public Health is to first establish with the test requester whether the patient presented with an acute diarrhoeal illness or STEC complications, or has high risk factors. **In general, public health investigation will be carried out only if these criteria are met.** This is an interim arrangement until further guidance becomes available from the Ministry of Health.

Dr Kiyoshi Shiga – discovered Shigella dystenteriae – The Shiga toxin produced by STEC is very similar to the toxin produced by S. dysenteriae. Image: https://en.wikipedia.org/wiki/Kiyoshi_Shiga

KEY MESSAGES: TOP 5 WAYS TO STAY HEALTHY THIS WINTER

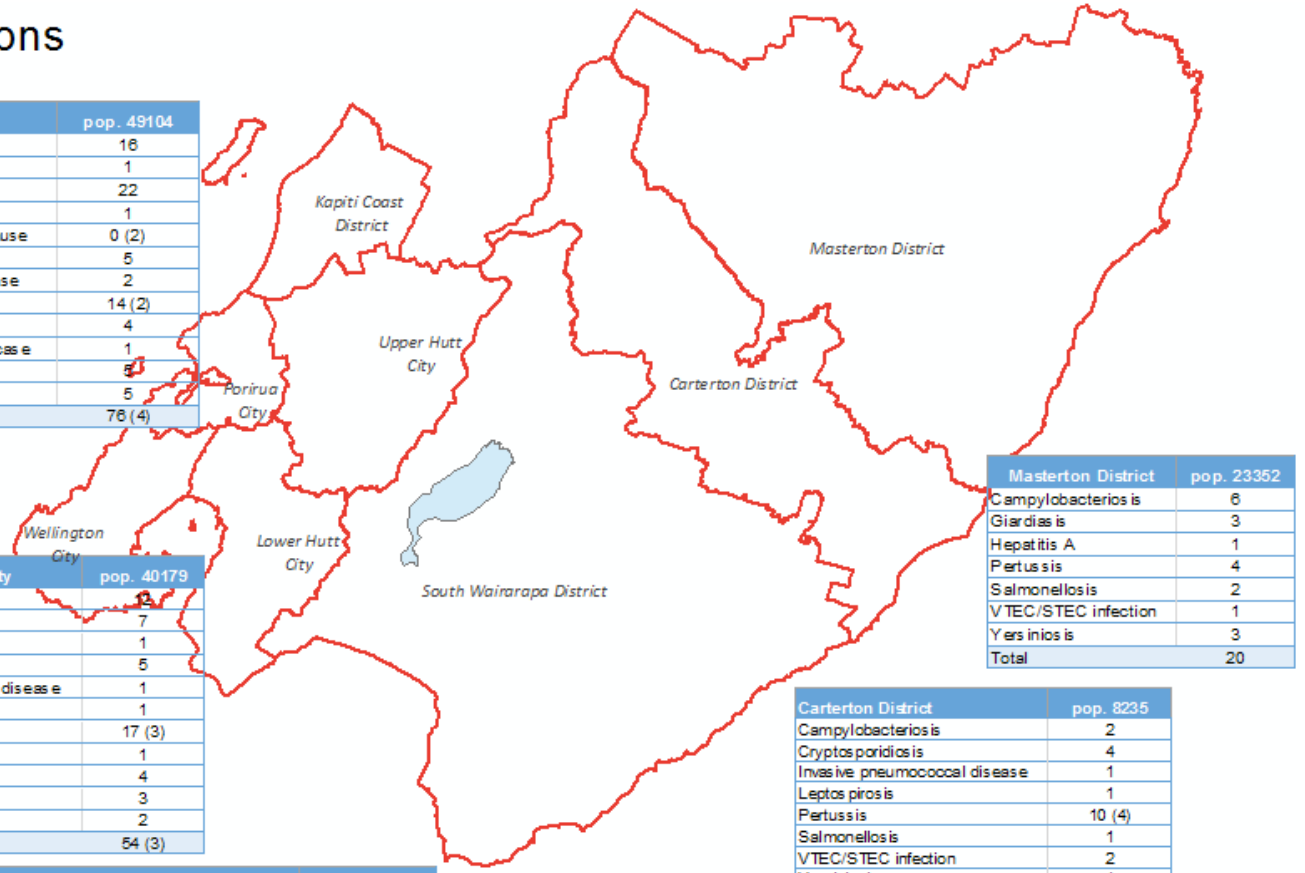
1. **WASH AND DRY HANDS REGULARLY.** Stop the spread of germs.
2. **STAY HOME WHEN YOU ARE SICK.** Prevent spreading illness to others.
3. **KEEP WARM.** Insulation, heating and ventilation keep your home warm and dry. Contact the Well Homes team who may be able to help on 0800 675 675.
4. **KEEP HOMES AND CARS SMOKE-FREE.** If you smoke, we are here to help you quit. Contact the Takiri Mai Te Ata Regional Stop Smoking Service on 0800 926 257.
5. **GET THE 'FLU' VACCINE TO HELP KEEP YOU WELL.** Some children and adults can get the vaccine for free. Call the team at your GP clinic or pharmacist to find out.

Regional Public Health Notifications

1st January 2018 to 31st March 2018

Kapiti Coast District	pop. 49104
Campylobacteriosis	16
Chikungunya fever	1
Cryptosporidiosis	22
Dengue fever	1
Gastroenteritis - unknown cause	0 (2)
Giardiasis	5
Invasive pneumococcal disease	2
Pertussis	14 (2)
Salmonellosis	4
Tuberculosis disease - new case	1
VTEC/STEC infection	5
Yersiniosis	5
Total	76 (4)

Porirua City	pop. 51717
Campylobacteriosis	19
Cryptosporidiosis	8
Dengue fever	1
Gastroenteritis - unknown cause	1 (1)
Gastroenteritis / foodborne intoxication	0 (1)
Giardiasis	6
Invasive pneumococcal disease	2
Mumps	2
Pertussis	19 (5)
Rheumatic fever - initial attack	0 (1)
Salmonellosis	5
Shigellosis	2
VTEC/STEC infection	6
Yersiniosis	2
Total	73 (8)



Masterton District	pop. 23352
Campylobacteriosis	6
Giardiasis	3
Hepatitis A	1
Pertussis	4
Salmonellosis	2
VTEC/STEC infection	1
Yersiniosis	3
Total	20

Upper Hutt City	pop. 40179
Campylobacteriosis	12
Cryptosporidiosis	7
Dengue fever	1
Giardiasis	5
Invasive pneumococcal disease	1
Malaria	1
Pertussis	17 (3)
Salmonellosis	1
Shigellosis	4
VTEC/STEC infection	3
Yersiniosis	2
Total	54 (3)

Carterton District	pop. 8235
Campylobacteriosis	2
Cryptosporidiosis	4
Invasive pneumococcal disease	1
Leptospirosis	1
Pertussis	10 (4)
Salmonellosis	1
VTEC/STEC infection	2
Yersiniosis	1
Total	22 (4)

Wellington City	pop. 190956
Campylobacteriosis	86
Cryptosporidiosis	49
Dengue fever	5
Gastroenteritis - unknown cause	0 (11)
Gastroenteritis / foodborne intoxication	2
Giardiasis	17
Hepatitis A	1
Invasive pneumococcal disease	3
Malaria	2
Measles	1
Mumps	0 (1)
Paratyphoid fever	1
Pertussis	35 (5)
Salmonellosis	15
Shigellosis	4
Tuberculosis disease - new case	3
Tuberculosis disease - relapse or reactivation	1
Typhoid fever	2
VTEC/STEC infection	14
Yersiniosis	22
Total	263 (17)

Lower Hutt City	pop. 98238
Campylobacteriosis	46
Cryptosporidiosis	22
Gastroenteritis - unknown cause	0 (3)
Gastroenteritis / foodborne intoxication	0 (1)
Giardiasis	13
Invasive pneumococcal disease	2
Legionellosis	1
Malaria	1
Mumps	0 (1)
Pertussis	18 (1)
Rheumatic fever - initial attack	0 (1)
Salmonellosis	5
Shigellosis	3
VTEC/STEC infection	10
Yersiniosis	16
Total	137 (7)

South Wairarapa District	pop. 9528
Campylobacteriosis	5
Cryptosporidiosis	2
Giardiasis	3
Pertussis	10 (4)
Salmonellosis	1
VTEC/STEC infection	2
Yersiniosis	4
Total	27 (4)

Notes:

1. Population data from Statistics New Zealand 2013 Census 'usually resident population'.
2. Tables present the number of 'confirmed cases', with additional 'probable cases' in brackets.
3. Notification data from Episurv database. ESR, 21/5/2018.

Figure 1. Notifiable cases in the Hutt Valley, Wairarapa and Wellington 1/1/2018 – 31/3/2018, tabulated by territorial authority

WHAT ARE YOU REPORTING?

THREE MONTHS OF NOTIFIED CASES IN THE HUTT VALLEY, WAIRARAPA, WELLINGTON

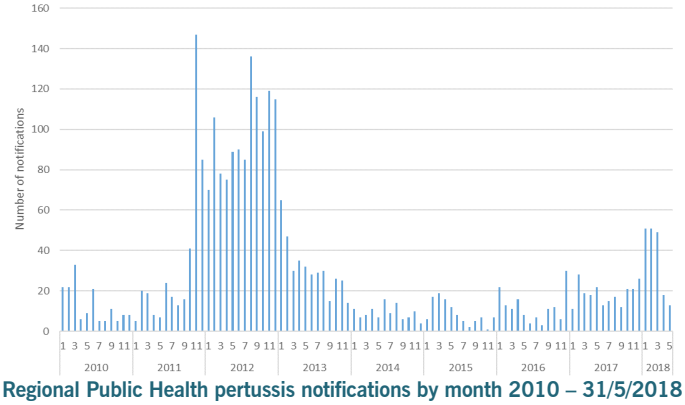
Dr Jonathan Kennedy, Medical Officer, Regional Public Health

Table 1. Notified cases by DHB in the Hutt Valley, Wairarapa and Wellington 1/1/2018 – 31/3/2018.
Table includes 'confirmed' cases with additional 'probable' cases in brackets

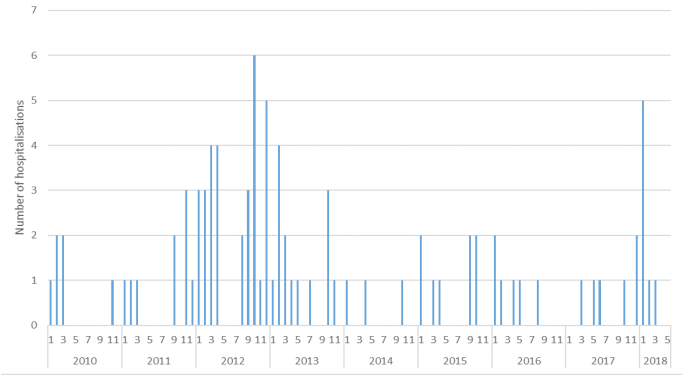
Notifiable Condition	Capital and Coast	Hutt Valley	Wairarapa	Totals
Campylobacteriosis	121	58	13	192
Chikungunya fever	1			1
Cryptosporidiosis	78	29	6	114
Dengue fever	7	1		8
Gastroenteritis - unknown cause	1(14)	(3)		1(17)
Gastroenteritis / foodborne intoxication	2(1)	(1)		2(2)
Giardiasis	28	18	6	52
Hepatitis A	1		1	2
Invasive pneumococcal disease	7	3	1	11
Legionellosis		1		1
Leptospirosis			1	1
Malaria	2	2		4
Measles	1			1
Mumps	2(1)	(1)		2(2)
Paratyphoid fever	1			1
Pertussis	68(12)	35(4)	24(8)	127(24)
Rheumatic fever - initial attack	(1)	(1)		0(2)
Salmonellosis	23	6	4	34
Shigellosis	6	7		13
Tuberculosis disease - new case	4			4
Tuberculosis disease - relapse or reactivation	1			1
Typhoid fever	2			2
VTEC/STEC infection	24	13	5	43
Yersiniosis	29	18	8	55
Totals	409(29)	191(10)	69(8)	672(47)

Notes ([1,2])

1. The *chikungunya fever* case was a 59 year old woman, exposed to mosquito bites in Cambodia and Thailand.
2. *Dengue fever* cases all reported recent overseas travel, principally to Samoa or Fiji.
3. Two cases of *Corynebacterium diphtheriae* infection were investigated but do not appear as cases in the notification statistics above. Both were skin infections and were later identified to be non-toxigenic, and were therefore de-notified.
4. Investigation of cases of *giardiasis* identified possible sources from drinking water overseas, or locally from untreated tank or stream water.
5. Two cases of *hepatitis A* were reported; one was a 39 year old male IT worker who presented with jaundice, the other a 61 year old male wool handler who presented with cardiovascular symptoms and was found to have deranged liver function tests and positive serology.
6. A 57 year old woman developed *Legionellosis* after probable exposure to the bacteria while using potting mix in her garden without protective equipment such as a mask.
7. *Leptospirosis* was identified in a 26 year old farmer from Wairarapa, with probable exposure via cuts on the hands while handling sheep.
8. *Listeriosis* was notified in an immune-suppressed 69 year old woman with renal failure who had eaten cold and processed meat products.
9. Cases notified with *malaria* had travelled to Thailand, Cambodia, Vietnam and Papua New Guinea.
10. The case of *paratyphoid fever* had travelled to Cambodia and Hong Kong during the incubation period.
11. High numbers of *pertussis* cases were reported, spread across age groups. The high numbers of cases were reflected in the highest monthly number of hospitalisations since the major outbreak during 2012 – 2013. This is a reminder of the importance of vaccination, including appropriate booster doses such as during pregnancy. See Issue 32 of the Public Health Post for more information: http://www.rph.org.nz/resources/newsletters/the-public-health-post/issue-32-february-2018.pdf



Regional Public Health pertussis notifications by month 2010 – 31/5/2018



Regional Public Health pertussis hospitalisations by month 2010 – 31/5/2018

12. *Rheumatic fever* was notified in a 12 year old female from Lower Hutt with arthritis, raised inflammatory markers and evidence of a recent group A streptococcal infection. As well, a 13 year old female from Porirua presented with polyarthritis and fever, raised inflammatory markers, ECG changes, and evidence of a preceding group A streptococcal infection. Both were started on long-term injectable penicillin prophylaxis.
13. *Scombroid poisoning* was reported in a 39 year old male from Hutt Valley who had eaten locally bought fish fillets with possible temperature abuse prior to eating.
14. *Shigellosis* cases were predominantly acquired overseas, in Tonga, Samoa, India and South-East Asia. However, one case was thought to be due to spread from another local case reported in December 2017.
15. *STEC* – Shiga toxin producing *E. coli* infections are being reported in much greater numbers than the previous norm. This is due to a change in the laboratory testing methods used for stool specimen analysis where a more sensitive PCR based test is predominantly replacing the older culture, microscopy and antigen detection methods. See the accompanying article in this edition of The Public Health Post for more information.
16. Two sisters aged 16 and 21 years old who had visited India developed *typhoid fever*.
17. *Outbreaks* investigated during the three months were dominated by gastrointestinal infections. 11 guests at a hotel developed nausea and vomiting while 24 residents and five staff at a local rest home developed gastroenteritis symptoms. In another outbreak, four wings of another rest home involving 50 residents and 19 staff had gastroenteritis symptoms. Regional Public Health visited the rest home and the rest home conducted own internal audit as well. See the accompanying article for more information about this outbreak.

References

1. Episurv database of notifiable conditions [Internet]. 2018 [cited 21/1/2018]. Available from: **https://episurv.survinz.esr.cri.nz/episurv.htm.**
2. Regional Public Health. Notifiable condition surveillance records. 2018.

DISEASE NOTIFICATION – HOW YOUR GENERAL PRACTICE CAN HELP

To enable our staff to promptly initiate disease follow up we need your help in the following ways:

1. Inform your patient of the illness they have been diagnosed with or exposed to and that public health staff may be in contact.
2. Notify Regional Public Health of the disease within a timely fashion (after the case has been informed) - by phone for urgent notifications (as soon as you are aware), or by faxing a case report form for non-urgent (within one working day). You can find a list of urgent vs. non-urgent notifications on the Regional Public Health website under Health Professionals > Notifiable Diseases.
3. Complete all sections of the form, especially:
   - work/school/early childhood centre information
   - name of parent or guardian for a child under 16 years old.

The 3D HealthPathways includes a pathway on reporting notifiable diseases: **http://3d.healthpathways.org.nz**

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 (04) 570 9002 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.

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, by email **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 Craig Thornley, Dr Annette Nesdale and Dr Stephen Palmer.**

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  - HUTT VALLEY DHB - ADD NEW DOCUMENT, CREATE INTERNAL REFERRAL, SELECT 'EREF HEALTHY HOMES'.
  - CCDHB - ADD NEW DOCUMENT, SELECT 'HEALTHY HOUSING REFERRAL'.
- MEDTECH OUTBOX FORM.
- SELF REFERRAL = 0800 675 675, OR GO TO **WWW.RPH.ORG.NZ/WELLHOMES**.

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Winds of Change: Tools for TB Elimination

For two days in Wellington in August 2018, researchers, clinicians, practitioners and policy makers will gather for a conference focused on tuberculosis.

Tuberculosis (TB) remains a cause of high health burden worldwide. TB is ranked as one of the top 10 contributors to mortality worldwide – in 2015, 1.8 million deaths were due to TB. Over 1200 new cases occur in Australia and 300 in New Zealand annually.

We are also in a time of change in TB: increasing frequency of multidrug resistance, greater migration from countries with high TB burden, new diagnostic techniques, treatments, and tools for understanding TB epidemiology all create an imperative for building capacity and enhancing skills among the TB control healthcare workforce.

The 2018 Australasian Tuberculosis Conference is therefore timely. We expect to receive registration of delegates primarily from New Zealand and Australia, who will join together to debate and discuss new areas of TB science, learn new techniques and practices, and develop networks to better improve and coordinate TB management across the region.

We expect that the conference will appeal to professionals involved in all aspects of tuberculosis management: clinical care (investigation, diagnosis, treatment); occupational health; infection control; public health; policy and guideline development; immigration; laboratory science and research.

CONFERENCE THEMES

- Tuberculosis elimination, with a focus on low burden countries.
- Migration and other cross-border issues.
- Latent tuberculosis infection.
- Innovations in laboratory science, in particular the application of whole genome sequencing.
- Drug resistant tuberculosis.

CONFIRMED SPEAKERS

Dr Timothy Walker, John Radcliffe Hospital, University of Oxford: whole genome sequencing for tuberculosis elimination.

Professor Ben Marais, Children's Hospital at Westmead Clinical School, University of Sydney: childhood TB and natural history of disease.

Dr Chris Coulter, Director, Queensland Mycobacterium Reference Laboratory and WHO Collaborating Centre in Tuberculosis Bacteriology.

DATES AND VENUE

The Australasian Tuberculosis Conference 2018 will be held from Thursday 30 August to Friday 31 August 2018 at the Te Papa Museum, Wellington, New Zealand. The museum is within walking distance from major hotels.

CONTACT DETAILS

This conference is facilitated by Regional Public Health, Hutt Valley District Health Board, Lower Hutt, New Zealand.

Conference organiser: Conference Innovators
Contact: Claire Bark
Phone: (09) 972 2034
Email: claire@conference.nz