Communicable Diseases Weekly Report

Week 50, 12 to 18 December 2016

In summary, we report:

- Measles – two new cases
- Legionellosis – increase in *L. pneumophila* notifications and one fatal case; legionella discussion paper
- Cryptosporidiosis
- Summary of notifiable conditions activity in NSW

For further information on infectious diseases on-line see NSW Health Infectious Diseases.

Also see NSW Health Infectious Diseases Reports for links to other surveillance reports. Please note that this will be the final routine report of 2016.

Measles

Two new cases of measles were notified this reporting week (Table 1). The cases were from Sydney and South East Sydney Local Health Districts (LHD) and both were young adults. It is likely that the two cases acquired the infection from the measles case reported from South East Sydney LHD in the previous week. Both of these cases spent time in the Sydney metropolitan region while infectious and it is important for everyone to be alert for the symptoms of measles. NSW Health has issued a media alert and put material on its Facebook page to alert the community about the risk of measles symptoms appearing in unimmunised people who may have been exposed.

Fifteen measles cases have been reported this year to date in NSW. Of these cases, seven acquired the infection outside Australia, and eight acquired their infection in Australia (three in Queensland, and five in NSW).

Measles is endemic in many countries and it is important for people planning travel to make sure they are vaccinated. Travellers returning from areas where measles still circulates should seek medical advice if they develop the symptoms of measles. It is important that if someone suspects that they or a family member has symptoms of measles, they call ahead to their local doctor or emergency department so arrangements can be made to keep the person with suspected measles away from others who could be at risk of infection.

The measles virus is transmitted from person to person via respiratory secretions in the air following coughing and sneezing. Symptoms of measles include fever, runny nose, sore red eyes and cough, followed 3-4 days later by a red blotchy rash spreading from the head and neck to the rest of the body.

Infection with the measles virus can be serious with common complications including middle ear infection and viral or bacterial bronchopneumonia. Acute encephalitis occurs rarely and subacute sclerosing panencephalitis is a very rare fatal complication, occurring many years after infection in about 1 per 100,000 cases.

Vaccination is highly effective at preventing measles with two doses of measles containing vaccine offering protection against infection in 99% of people. Vaccination not only benefits those who receive it but also protects others, such as those too young or unable to be vaccinated, by reducing the risk that an unvaccinated person is exposed to measles virus; this is known as herd immunity.

Anyone born in or after 1966 should have had two doses of measles containing vaccine, which is free for people up to 50 years of age in NSW. Measles containing vaccine is now routinely offered to all children at 12 months (as measles-mumps-rubella) and 18 months (as measles-mumps-rubella-varicella) of age through the National Immunisation Program.

If you were born in or after 1966 and are unsure of your vaccination status, or have not had two vaccine doses in the past (and not had a confirmed measles infection), consult your GP for more advice. This is particularly important prior to overseas travel as the risk of being exposed to a case of measles is greater when travelling.

For more information please follow these links: measles fact sheet, measles notifications and measles vaccination.

Legionellosis

There were three notifications of *Legionella pneumophila* in this reporting week (Table 1), and there have been a further three cases notified in the following week (week 51). Unfortunately one case was fatal; an adult woman from Sydney with a significant underlying illness.

The other five cases were males, all were aged between 53 and 85 years and residents of Sydney or surrounding areas. Most reported having a significant underlying health conditions or other risk factor for *Legionella* infection, such as smoking. All of the cases required hospitalisation, with four admitted to intensive care units.

When Legionnaires' disease cases are identified, NSW Health public health unit staff interview patients and their families about their illness and possible exposures, including all locations where they travelled, worked, stayed or visited during the two to 10 days before the onset of illness. They then map these locations and compare them closely with the exposures reported by other patients who have recently been diagnosed with Legionnaires' disease. The six recent cases have reported travel to many parts of Sydney and surrounds.

To date no locations have been identified that link these cases or suggest a common source of exposure, but investigations are continuing.

Case reporting of Legionnaires' disease peaks in the summer and autumn months. Case reports have been reasonably stable in the past five years with 70-100 cases reported every year. There have been 121 cases reported in 2016 up to 22 December which is higher than the four-year average of 88 cases for the same time period. Of the 121 cases, 87 cases have been due to the *L. pneumophila* strain commonly associated with contaminated aerosolised water, with the remaining 34 due to *L. longbeachae*.

Legionellosis is a type of pneumonia caused by infection with *Legionella* bacteria. The symptoms include fever, chills, cough and shortness of breath. Some people also have muscle aches, headache, tiredness, loss of appetite and diarrhoea. Risk factors for legionellosis include increasing age (most cases are aged over 50 years), smoking, and immunosuppression as a result of chronic medical conditions, cancer or taking high-dose corticosteroid medicines. People with legionellosis often have severe symptoms and infection is associated with a 10 to 15 per cent mortality rate. Legionellosis is not spread from person to person.

There are around 50 different species of *Legionella* bacteria but most infections in NSW are caused by *L. pneumophila* or *L. longbeachae*, and typically occur after inhaling contaminated water aerosols or dust.

L. longbeachae is found in potting mix, compost and soils and infection is associated with gardening and the use of potting mix. To prevent this type of legionellosis it is recommended that people handling potting mix wet the mix beforehand to reduce dust, wear gloves and a mask, and wash their hands after handling potting mix or soil.

L. pneumophila is found in water and can contaminate air conditioning cooling towers, spas, plumbing systems and other bodies of warm water. Outbreaks are sometimes associated with contaminated cooling towers that are part of air conditioning systems in large buildings. Regular inspection, disinfection and maintenance of cooling towers and plumbing systems limits the growth of bacteria and prevent outbreaks of Legionnaires' disease.

Follow the links for more information on Legionnaires' disease and on notifications of Legionnaires' disease.

Legionnaires' disease discussion paper

The NSW *Public Health Act 2010* and the Public Health Regulation 2012 control various man-made environments and systems which are conducive to the growth of *Legionella* bacteria and which are capable, under the right conditions, of transmitting legionellosis.

In 2016 NSW Health established a Legionella expert panel to advise the Chief Health Officer on whether any new measures are required to strengthen prevention and control activities. The expert panel comprised public health physicians, environmental health officers, an infectious disease physician, a legal expert, industry experts, a mechanical engineer and a local government representative. It reviewed existing regulations, policies and procedures in place in NSW, how they compared with other jurisdictions, both nationally and internationally, and lessons learned from the recent outbreak investigations.

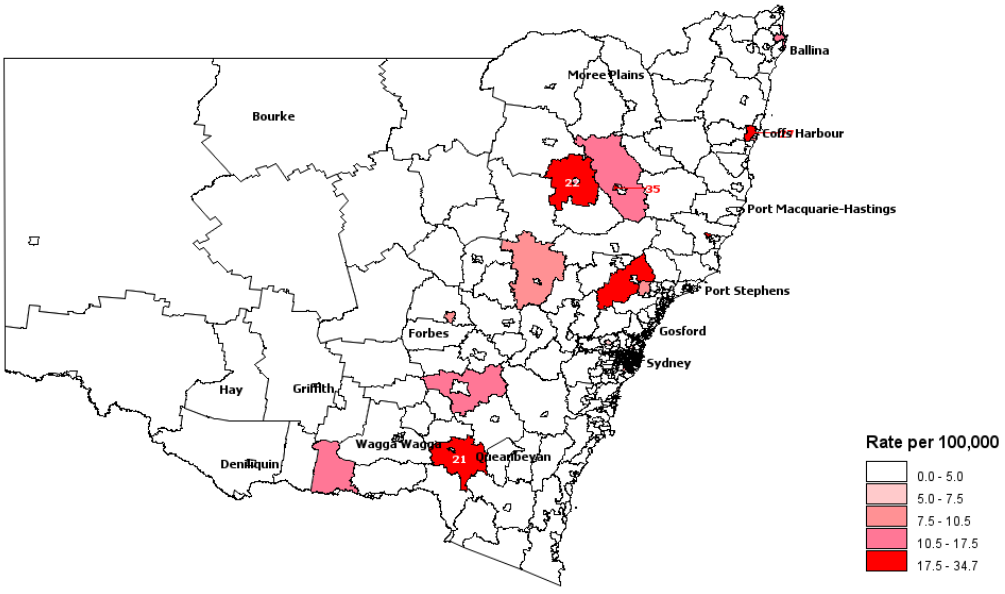
While recognising that NSW already has a strong regulatory system for preventing Legionnaires' disease, the expert panel recommended strengthening it by further developing risk management plans for the operation of cooling towers.

A discussion paper has been prepared providing an overview of the current regulatory framework, the panel's recommendations, and a discussion of how these are proposed to be implemented. Follow the link for information on making submissions related to the discussion paper.

Cryptosporidiosis

Cryptosporidiosis notifications are above normal levels for this time of year, with 51 cases reported in the current period compared to the previous 5-year average of 16 cases per week (Table 1). Cases were mainly reported amongst residents of regional local health districts (Figure 1). Disease incidence typically peaks during summer months between January and March each year, often linked with swimming pools and other recreational water exposures. No common recreational water facilities were reported in those cases interviewed this week.

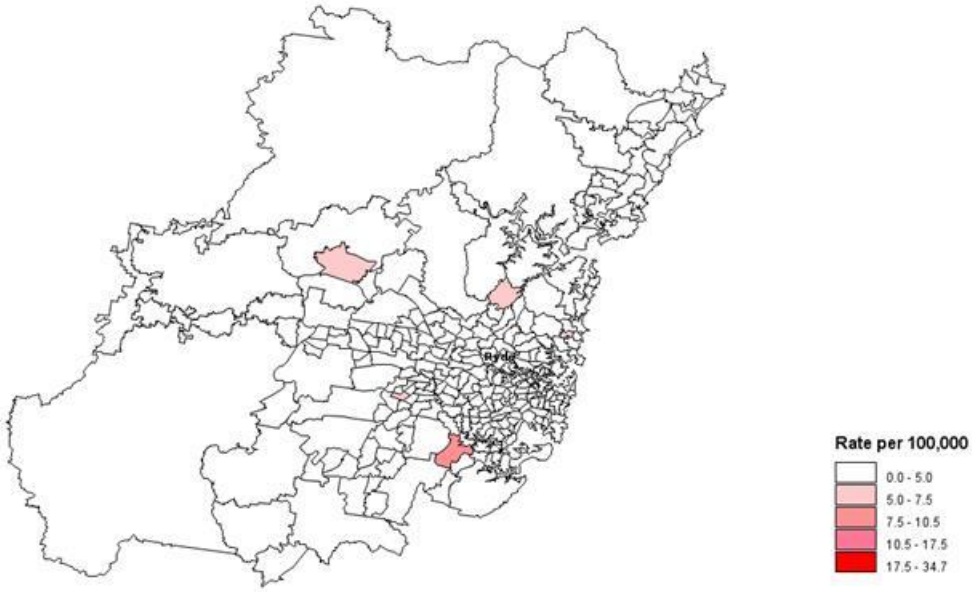
Figure 1. Cryptosporidiosis population notification rates, 12 to 18 December 2016 in regional (a.) and metropolitan Sydney (b.) by SA2[1] and symptom onset date



a.

[1] Statistical Local Area Level 2. See Australian Bureau of Statistics description.

b.



Cryptosporidiosis is a diarrhoeal disease caused by the parasitic protozoan, *Cryptosporidium* spp. These microscopic parasites are transmitted as environmentally hardy cysts (oocysts), shed from infected humans and animals (including dogs, cats, livestock and wildlife) and can survive up to six months in moist environments. Cryptosporidiosis is spread through the faecal-oral route directly from person to person, from animal to person, and by ingesting contaminated food and water.

Cryptosporidiosis outbreaks have also been linked to sources such as contaminated drinking water, swimming pools, spa pools, and to petting infected animals.

Infection may be asymptomatic, but disease usually presents as profuse watery diarrhoea and abdominal cramps after a 7 day incubation period (range 1-12 days). Nausea, vomiting, fever, dehydration and weight loss may also be present. Symptoms typically resolve within 1-2 weeks; however, some people may experience recurrence of symptoms for up to a month, and chronic or extra-intestinal infections may occur in people who are immunocompromised.

Patients are infectious while they excrete oocysts, which may continue for several weeks after diarrhoea stops.

As *Cryptosporidia* are resistant to usual levels of chlorine in swimming or spa pools, outbreaks are frequently associated with community pools. High doses of chlorine (superchlorination) and cleaning of filters are required in such instances.

Public pool operators are required to manage pools in accordance with the *Public Health Regulation 2012*, which includes requirements on the levels of disinfectants. The occurrence of two or more cases linked to a pool should prompt intervention by local public health units, including advice on superchlorination.

Preventive measures include:

- hand washing (especially after handling animals or animal manure, changing nappies, working in the garden and before preparing food)
- not drinking untreated water and avoiding swallowing water when swimming; and,
- avoiding swimming in natural waters within a week of heavy rain.

Cases or relevant care-givers should be informed about the nature of the infection and how it is spread, with emphasis on hygienic practices, particularly to:

- Not swim for at least two weeks after the diarrhoea has stopped
- Not share towels or linen for at least two weeks after the diarrhoea has stopped
- Not handle food for other people for at least 48 hours after the diarrhoea has stopped.

Children who have diarrhoea should be kept home from school, preschool, childcare or playgroup until at least 24 hours after the diarrhoea has completely stopped. Carers of the sick, children or the elderly should avoid all contact with these groups for at least 48 hours after complete resolution of symptoms.

For more information, see the following NSW Health factsheets and guidance:

- cryptosporidiosis factsheet
- factsheet on cryptosporidium and giardia in swimming pools and spa pools
- public health unit control guidelines
- advice for public swimming pool operators.

Summary of notifiable conditions activity in NSW

The following table summarises notifiable conditions activity over the reporting period (Table 1).

Table 1. NSW Notifiable conditions from 12 to 18 December 2016, by date received*

		Weekly		Year to date			Full Year	
		This week	Last week	2016	2015	2014	2015	2014
Enteric Diseases	Cryptosporidiosis	53	54	1118	958	406	1038	429
	Giardiasis	58	51	3390	3292	2841	3416	2942
	Hepatitis A	1	2	37	69	76	71	80
	Listeriosis	1	0	34	24	22	26	23
	Rotavirus	28	26	701	995	684	1036	714
	STEC/VTEC	3	6	61	25	31	29	31
	Salmonellosis	111	101	4408	3830	4101	4040	4272
	Shigellosis	5	5	292	163	205	172	212
	Typhoid	4	2	70	80	84	82	88
Respiratory Diseases	Influenza	127	136	35328	30233	20797	30306	20888
	Legionellosis	3	1	122	92	68	96	72
	Tuberculosis	15	8	499	424	462	445	475
Sexually Transmissible Infections	Chlamydia	477	550	25350	21692	22203	22548	22898
	Gonorrhoea	140	154	6815	5178	4741	5398	4876
Vaccine Preventable Diseases	Adverse Event Following Immunisation	4	2	247	183	254	186	258
	Measles	2	1	15	9	67	9	68
	Meningococcal Disease	1	2	69	45	36	46	37
	Mumps	1	2	57	60	80	64	82
	Pertussis	204	224	10644	11226	2802	12083	3051
	Pneumococcal Disease (Invasive)	7	5	543	479	496	495	511
	Rubella	1	0	10	6	8	6	10
Vector Borne Diseases	Chikungunya	2	0	36	37	25	37	27
	Dengue	2	8	436	323	373	343	378
	Ross River	21	18	460	1602	629	1637	673
Zoonotic Diseases	Q fever	5	2	220	253	184	265	190

*** Notes on Table 1: NSW Notifiable Conditions activity**

- Data cells represent the number of case reports received by NSW Public Health Units and recorded on the NSW Notifiable Conditions Information Management System (NCIMS) in the relevant period.
- Data cells in the 'Adverse Event Following Immunisation' category refer to suspected cases only. These reports are referred to the Therapeutic Goods Administration (TGA) for assessment. Data on adverse events following immunisation is available online from the TGA Database of Adverse Event Notifications.
- Only conditions for which at least one case report was received appear in the table. HIV and other blood-borne virus case reports are not included here but are available from the Infectious Diseases Data webpage.