Communicable Diseases Weekly Report

Week 42, 14 to 20 October 2018

In summary, we report:

- Shiga toxigenic *E. coli* – two new cases, one with haemolytic uraemic syndrome
- Legionellosis – three new sporadic cases
- Summary of notifiable conditions activity in NSW.

For further information see NSW Health infectious diseases page. This includes links to other NSW Health infectious disease surveillance reports and a diseases data page for a range of notifiable infectious diseases.

Shiga toxigenic *Escherichia coli* and Haemolytic Uraemic Syndrome

Two cases of Shiga toxigenic *Escherichia coli* (STEC) infection were notified in this reporting week, a teenager and a young child from the Sydney metropolitan area (Table 1). The young child subsequently developed haemolytic uraemic syndrome (HUS), a known complication of STEC infection. The two cases were not linked and the teenager had no history of high risk exposures for STEC.

The young child had a history of contact with animals in a petting zoo three days prior to his illness. As petting zoos have been linked to cases of STEC in the past, this information was provided to NSW Department of Primary Industries which reported that multiple inspections of the particular petting zoo over previous months had identified no hygiene concerns. No other children attending the same petting zoo were reported to be unwell so the case's visit is believed to be unrelated.

Escherichia coli (*E. coli*) are bacteria commonly found in the gastrointestinal tract of people and animals. Many types of *E. coli* are harmless but some can produce toxins, called Shiga toxins, which can result in severe disease in humans. STEC strains are carried by animals, particularly cattle, without signs of illness.

People are infected when they come into contact with the faeces of an infected animal or person, either directly or indirectly through consuming contaminated food (for example, undercooked hamburgers, unwashed salad vegetables, unpasteurised milk or milk products), drinking or swimming in contaminated water, person-to-person contact, or contact with animals on farms or petting zoos.

STEC infection causes a diarrhoeal illness, often with abdominal cramps, nausea and vomiting. The Shiga toxin may cause bleeding in the bowel so people with STEC gastroenteritis often have bloody diarrhoea. Haemolytic uraemic syndrome (HUS) is a severe and sometimes life-threatening illness characterised by haemolytic anaemia (a type of anaemia where the red blood cells break up), acute kidney failure (uraemia), and a low platelet count which makes bleeding more likely. Children with STEC infections are more likely to develop HUS than adults.

STEC infections may be prevented by safe food handling and food storage, and good hand hygiene. This includes:

- washing your hands thoroughly with running water and soap before eating and preparing food, after touching pets, farm animals, their enclosures or feeding containers, and after using the toilet or changing nappies;
- only using clean knives and cutting boards when preparing ready-to-eat foods;

- thoroughly cooking all foods made from minced meat (e.g. hamburger patties and sausages);
- washing all fruit and vegetables before eating; and
- not eating or drinking unpasteurised dairy products.

For further information on personal hygiene and petting zoos see the NSW Health fact sheet.

For further information see the STEC and HUS fact sheet and STEC notification data page.

Legionellosis (Legionnaires' disease)

There were three notifications of legionellosis (Legionnaires' disease) this reporting week (Table 1). All of the cases were confirmed to be due to *Legionella pneumophila* serogroup 1 (LP1) and involved residents from the Northern Sydney, South Western Sydney and the Nepean Blue Mountains Local Health Districts. One of the cases is believed to have acquired their infection while travelling in South East Asia. The two remaining cases have been investigated by the local public health units but no common exposure sites have been identified that could link the cases to each other or other recent cases.

Legionellosis is a type of pneumonia and the symptoms include fever, chills, cough and shortness of breath. People with the infection often also have muscle aches, headache, tiredness, loss of appetite and diarrhoea. Risk factors for legionellosis include increasing age (most cases are in people 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 caused by infection with *Legionella* bacteria. There are around 50 different species of *Legionella* bacteria but most infections in NSW are caused by *L. pneumophila* or *L. longbeachae*. *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 limit the growth of bacteria and prevent outbreaks of Legionnaires' disease.

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 the bacteria to people through the air.

NSW Health has strengthened the *Public Health Regulation 2012* to require a performance based (or risk management) approach to managing cooling water systems. This approach allows each system to be managed according to its risk of *Legionella* contamination.

From 10 August 2018, building occupiers are required to ensure that there are six key safeguards in place for their cooling water systems:

1. Risk assessment of *Legionella* contamination, documented in a Risk Management Plan (RMP) – every five years (or more frequently if required)
2. Independent auditing of compliance with the RMP and Regulation – every year
3. Providing certificates of RMP completion and audit completion to the local government authority
4. Sampling and testing for *Legionella* and heterotrophic colony count – every month
5. Notifying reportable laboratory test results (*Legionella* count ≥1000 cfu/mL or heterotrophic colony count ≥5,000,000 cfu/mL) to the local government authority
6. Displaying unique identification numbers on all cooling towers.

The requirements for building occupiers to test for *Legionella* bacteria on a monthly basis and notify high 'reportable test results' to the local government authority commenced on 1 January 2018.

Follow the links for more information on:

- Legionnaires' disease

- Data on notifications of cases of Legionnaires' disease.
- Legionella control legislation and resources.

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 14 to 20 October 2018, by date received*

		Weekly		Year to date			Full Year	
		This week	Last week	2018	2017	2016	2017	2016
Enteric Diseases	Cryptosporidiosis	8	10	601	1166	893	1266	1184
	Giardiasis	39	40	2177	2638	2953	3134	3480
	Haemolytic Uremic Syndrome	1	0	3	2	2	2	4
	Hepatitis A	2	0	77	54	32	72	41
	Rotavirus	14	11	670	1895	447	2319	750
	STEC/VTEC	2	1	43	44	43	53	65
	Salmonellosis	59	41	2670	3046	3770	3680	4533
	Shigellosis	23	19	352	189	251	235	310
	Typhoid	1	0	47	48	31	55	37
Respiratory Diseases	Influenza	301	410	15176	101897	33393	103853	35540
	Legionellosis	3	1	110	102	107	138	134
	Tuberculosis	9	6	421	421	416	543	533
Sexually Transmissible Infections	Chlamydia	559	598	25371	23365	21107	28973	25987
	Gonorrhoea	185	224	8684	7460	5585	9171	6993
	LGV	1	0	71	37	49	50	60
Vaccine Preventable Diseases	Adverse Event Following Immunisation	4	2	248	250	213	279	262
	Meningococcal Disease	2	0	57	77	59	91	70
	Pertussis	161	144	3942	4521	8753	5365	10956
	Pneumococcal Disease (Invasive)	16	9	559	578	445	683	545
Vector Borne Diseases	Chikungunya	1	0	4	35	19	47	39
	Dengue	3	2	215	242	405	306	485
	Malaria	2	4	59	61	46	68	59
	Ross River	7	9	492	1562	418	1653	595
Zoonotic Diseases	Q fever	1	6	169	173	178	210	231

*** 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 (i.e. by report date). Note that notifiable disease data available on the NSW Health website are reported by onset date so case totals are likely to vary from those shown here.
- 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 chronic blood-borne virus case reports are not included here but are available from the Infectious Diseases Data webpage.