Communicable Diseases Weekly Report

Epi-Week 7 10 February 2014 – 16 February 2014

In summary, we report:

- **Ciguatera** – five cases
- **Leptospirosis** – two cases year to date
- **Summary of notifiable conditions activity in NSW**

For further information on infectious diseases and alerts see the Infectious Diseases webpage.

Follow the A to Z of Infectious Diseases link for more information on specific diseases.

For links to other surveillance reports, including influenza reports, see the NSW Health Infectious Diseases Reports webpage.

Ciguatera

Five cases of ciguatera poisoning were reported this week in a group who ate a large Spanish mackerel. The fish had been caught at Chaos reef off Evans Head in northern NSW.

Ciguatera poisoning occurs from eating fish containing the ciguatera toxin. This toxin is produced by a certain type of dinoflagellate, a very small marine organism living in tropical and subtropical waters. These dinoflagellates adhere to coral, algae and seaweed where they are eaten by small herbivorous fish that are in turn eaten by larger carnivorous fish. The toxin is concentrated as it moves up the food chain. Large predator fish that feed in warm ocean waters are potential carriers of ciguatera poison. Fish species that have caused ciguatera poisoning in humans include coral trout, Spanish mackerel, red emperor, wrasse, reef cod, sturgeon fish, trevally, queenfish, chinaman, red bass, groper, barracouta and kingfish.

Ciguatera toxin does not affect the appearance, odour or taste of the fish, and cooking or freezing do not destroy the toxin.

Symptoms of ciguatera poisoning begin one to 24 hours after eating fish containing ciguatera toxin. The time taken for symptoms to develop in an individual depends on how much fish is eaten and on how much toxin is in the fish. Symptoms can include:

- nausea, vomiting and diarrhoea, often with abdominal cramps;
- tingling and numbness in fingers, toes, around lips, tongue, mouth and throat;
- headache, tiredness, dizziness and fainting;
- temperature reversal with a burning sensation on contact with cold water;
- intense itchiness;
- joint and muscle pain with muscular weakness; and
- convulsions and difficulty breathing in severe cases.

Most symptoms disappear within days to several weeks, but some may persist for months causing significant distress. People who have had ciguatera poisoning are more sensitive to further exposure to the toxin, particularly in the first few months after their illness. They should avoid eating warm water fish for at least six months. Alcohol should also be avoided as this can trigger ciguatera poisoning symptoms. Ciguatera toxin is only slowly excreted from the human body.

Ciguatera poisoning can be avoided by not eating large warm water fish. Fish weight should be limited to about six kilogram as ciguatera poisoning usually occurs when larger fish are eaten. The head, roe, liver and other viscera of warm water ocean fish should not be eaten, as ciguatera toxin is concentrated in these parts of the fish.

There are certain reefs in waters off the Northern Territory and Queensland which are known to be associated with ciguatera poisoning. Fish of any size caught at these reefs should not be eaten.

Follow the links for further information on seafood poisoning.

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Leptospirosis

One case of leptospirosis was notified this reporting week, with a total of two notified to date in 2014 (Table 1). The most recent case had a disease onset date in January 2014 and the earlier case became unwell in December 2014. One case, an adult male infected with *Tarassovi* serovar, was hospitalised in Australia after acquiring the infection either in the United States or the Dominican Republic while freshwater canyoning. *Tarassovi* is a common serovar in America, but uncommon in Australia. The other infection, not requiring hospitalisation, was due to *Hardjo* serovar and occurred in an adult female in Hunter New England LHD who works with cattle assisting with birthing and pregnancy testing. *Hardjo* serovar is responsible for around 15-25% of leptospirosis notifications in Australia and is associated with cattle, both dairy and meat producing.

Leptospirosis has been recognised by the World Health Organization as a re-emerging infectious disease. It is found worldwide and there are thought to be over a million cases annually. It is caused by the spiral-shaped bacterium *Leptospira*. There are seven main species of *Leptospira* that cause disease, which are divided into more than 250 serovars.

Leptospira infection ranges from no or mild illness to severe disease in 5-15% of cases. Severe infections can be fatal. The infection starts off with an initial phase consisting of an influenza like illness with sudden onset of fever, muscle and joint pain and headache. About 30% of cases have red eyes. Severe cases then go on to prolonged fever with one of several patterns of clinical disease:

- Weil's syndrome with jaundice, kidney failure, inflammation of the heart and bleeding;
- meningitis (inflammation of the lining of the brain); and
- bleeding into the lung with respiratory failure.

Symptoms usually develop 5-14 days after infection and last from a few days to 3 weeks or longer. Late stage inflammation of the eye may occur and persist for several years.

Leptospira are shed in the urine of infected animals and humans. They are also present in the amniotic fluid and placenta of infected animals. Humans are infected when the organisms enter the body through breaks in the skin, or occasionally through the lining of the mouth, nose or eyes. Water, mud and moist vegetation that have been contaminated with infected animal urine are the most common sources of leptospirosis. Drinking contaminated water or eating contaminated food is also known to result in transmission.

People at risk of leptospirosis are those who have close contact with animals or who are exposed to contaminated water, mud, soil or vegetation. It is more common in tropical areas than temperate zones. In Australia, leptospirosis is seen in sugar cane and banana farmers, veterinarians and abattoir workers; most cases occur in Queensland. More males are infected than females due to occupational exposures. Leptospirosis is also a recreational hazard for people who undertake freshwater activities such as swimming, white water rafting and caving.

Outbreaks occur and are usually associated with exposure to flood waters contaminated with the urine, fluids and tissues of infected animals. The widespread flooding in south east Queensland in 2011 resulted in around 50 cases of leptospirosis.

Many wild and domestic animals can be infected with *Leptospira*, including rats and mice, cattle, pigs, dogs and native Australian marsupials such as bandicoots and kangaroos. Different animals tend to be infected with different *Leptospira* serovars.

The risk of leptospirosis can be reduced in those who work with animals by the use of protective equipment (e.g. gloves, goggles, boots) when working with animals or animal tissues that could be infected, covering of cuts and abrasions with a waterproof dressing, and handwashing after contact with animals particularly before eating. It can also be prevented by avoiding contact with water

than might be contaminated, covering cuts and abrasions before contact with soil, mud, water or vegetation that might be contaminated, and control of rodents close to housing.

Follow the link for more information on leptospirosis and on leptospirosis notifications.

Follow the link for more information on leptospirosis serovars and national surveillance reports (external links).

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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 10 February to 16 February 2014, by date received.*

		This week	Last week	Year to date			Full Year	
				2014	2013	2012	2013	2012
Enteric Diseases	Cryptosporidiosis	16	14	95	264	86	1132	655
	Giardiasis	66	77	326	396	359	2244	2013
	Hepatitis A	3	1	12	25	3	62	41
	Rotavirus	2	7	46	92	113	508	1761
	Salmonellosis	96	137	745	813	620	3485	2941
	Shigellosis	14	13	62	21	34	136	131
	Typhoid	2	2	10	12	6	58	43
Respiratory Diseases	Influenza	50	80	411	235	105	8401	8040
	Tuberculosis	3	2	38	68	67	424	456
Sexually Transmissible Infections	Chlamydia	457	508	3037	3434	3557	21074	21259
	Gonorrhoea	93	97	652	716	658	4271	4115
Vaccine Preventable Diseases	Adverse Event Following Immunisation	3	2	20	67	32	503	264
	Measles	1	0	11	2	2	33	174
	Meningococcal Disease	1	0	2	3	5	48	68
	Pertussis	45	53	258	519	1523	2378	5997
	Pneumococcal Disease (Invasive)	3	5	29	53	39	491	564
	Rubella	1	0	2	0	5	12	11
Vector Borne Diseases	Barmah Forest	6	4	31	79	49	441	344
	Dengue	3	8	50	45	60	289	285
	Malaria	2	5	13	20	9	93	68
	Ross River	9	9	48	91	89	512	597
Zoonotic	Leptospirosis	1	0	2	1	3	11	23
	Q fever	1	5	29	24	24	153	124

*** 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.

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