

Communicable Diseases Weekly Report

Epi-Week 39: 22 September – 28 September 2014

In summary, we report:

- [Diphtheria](#) – one case of cutaneous diphtheria
- [Brucellosis](#) – infections in dogs
- [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.

Diphtheria

One case of cutaneous diphtheria was reported this week. Although cases of cutaneous diphtheria do not meet the criteria for diphtheria under the national surveillance case definition for diphtheria they still require a public health risk assessment.

The case involved a man in his 60s who cut his foot and the wound became infected. A swab of the wound grew toxin-producing *Corynebacterium diphtheriae*. The man had been in Indonesia, staying on a farm with pigs and other animals, and did not wear shoes. He was treated with appropriate antibiotics, had a booster dose of diphtheria vaccine and throat swabs to check he did not have the organism in his pharynx. People who had contact with his wound were followed up; at risk contacts of people with diphtheria are recommended to have antibiotics and vaccination to prevent disease.

Diphtheria is a contagious and potentially life-threatening bacterial infection caused by toxin-producing strains of *Corynebacterium diphtheriae*. Diphtheria was a common cause of death in children up until the 1940s but now has almost disappeared in Australia due to immunisation.

Respiratory diphtheria occurs when toxigenic *Corynebacterium diphtheriae* infect the back of the throat. The first symptoms are a sore throat, loss of appetite and a mild fever. In two to three days, a membrane forms over the throat and tonsils that makes swallowing and breathing difficult. The lymph glands and tissues on both sides of the neck become swollen (“bull neck”). The toxin formed by the diphtheria bacteria can cause inflammation of heart muscle and nerves that can be fatal, with death occurring in 5-10% of cases.

Corynebacterium diphtheriae bacteria can also cause skin infections resulting in a poorly healing ulcer. Not all strains of *Corynebacterium diphtheriae* produce the toxin, and public health units receive notifications of skin infections caused by non-toxigenic *Corynebacterium diphtheriae* acquired in Australia from time to time. Skin infections caused by toxin-producing strains are potentially serious in unvaccinated people because of the effects of the toxin on the heart and nervous system. Cutaneous diphtheria is more common in the tropics than in areas where the climate is more temperate.

Diphtheria is usually spread by close contact with an infected person via droplets from the nose or throat, or contact with infected skin sores. It is also associated with consumption of unpasteurised milk or contact with animals. Symptoms usually begin about two to five days after exposure to the bacteria. After receiving appropriate antibiotic treatment, a person is considered non-infectious. Without antibiotics, infected people are usually infectious for two weeks from the onset of symptoms, and rarely for longer periods up to six months. Some

strains of *Corynebacterium diphtheriae* are resistant to some antibiotics, so bacteria causing disease should always be tested for antibiotic resistance.

Diphtheria is prevented by vaccination. The vaccine induces antibodies to the toxin, preventing the toxic effects of infection. High levels of diphtheria vaccination result in excellent herd immunity protecting the whole community. Outbreaks of respiratory diphtheria do occur in countries with low vaccination coverage; between 1990 and 1997 there were 150,000 cases and 5,000 deaths due to diphtheria reported in Russia, countries of the former Soviet Union and Mongolia.

Diphtheria vaccine is on the National Immunisation Program vaccination schedule and a primary course is given in a combination vaccine at ages 6-8 weeks, 4 months, and 6 months, with a booster at four years and another in the first year of high school. Adults should receive a booster at 50 years of age, and prior to travel to some countries (particularly South East Asia, Papua New Guinea, the states of the former Soviet Union, Baltic countries or eastern European countries) if more than 10 years have elapsed since their last dose of diphtheria vaccine.

Follow the links for further information on [diphtheria notifications](#) and [diphtheria vaccination](#).

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Brucellosis

In the previous reporting week the Hunter New England Public Health Unit coordinated the public health response to a case of *Brucella suis* diagnosed in a pig-hunting dog in northern NSW. A companion dog that lived on the same property also tested positive for the organism. This reporting week a further two pig-hunting dogs tested positive in the same region but are unrelated to the first two dogs.

Brucella suis infection can cause serious disease in people and spontaneous abortion in pregnant women. Feral pigs are the usual source of infection in NSW, but infected dogs are also a potential source of infection to people and other dogs. Infection occurs through contact with urine, saliva or other fluids of infected animals. The Department of Primary Industries (DPI) recommends that dogs with brucellosis be euthanized because of the risk to people.

Human brucellosis typically begins with a flu-like illness. This may include fever, headache, weakness, drenching sweats, chills, weight loss, joint and muscle pain, and generalised aches. Inflammation of the liver and spleen, and gastrointestinal or respiratory symptoms may also occur. In males, the testicles may become inflamed. Rarely, the valves inside the heart may become infected and this can be fatal. Symptoms usually start 5-60 days after infection and typically last for days or months but can occasionally last for a year or more and may recur.

To avoid brucellosis, when in direct contact with animals, people should:

- Cover all cuts or abrasions with waterproof dressings
- Wear gloves, overalls and face masks when slaughtering animals or handling carcasses, and wear gloves when handling birth products, such as placentas, vaginal discharges
- Wash hands and arms in soapy water after handling animals or carcasses. Wash off all urine, faeces, blood and other body fluids, and thoroughly clean all working areas with soapy water
- Avoid opening the swollen joints and testicles of feral pig carcasses as these may be brucellosis related
- Slaughter and butcher feral pig carcasses away from areas that are used for handling meat for human consumption
- Avoid feeding domestic animals raw feral pig meat.
- Ensure that feral pig meat (or other game) is thoroughly cooked prior to consumption

Follow the links for the [brucellosis factsheet](#) and for information on [brucellosis notifications](#). Follow the link for [advice on brucellosis for dog owners](#) from DPI.

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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 22 to 28 September 2014, by date received.*

		Weekly		Year to date			Full Year	
		This week	Last week	2014	2013	2012	2013	2012
Enteric Diseases	Cryptosporidiosis	6	4	307	1004	547	1132	655
	Giardiasis	46	52	2206	1784	1628	2242	2014
	Hepatitis A	1	2	51	51	28	62	41
	Rotavirus	16	16	411	358	1275	508	1760
	Salmonellosis	46	54	3269	2680	2210	3483	2941
	Shigellosis	2	5	160	98	99	136	131
Respiratory Diseases	Influenza	584	947	19282	7372	7456	8402	8036
	Tuberculosis	7	4	333	334	336	440	469
Sexually Transmissible Infections	Chlamydia	399	389	17266	16221	16489	21090	21267
	Gonorrhoea	92	77	3598	3350	3160	4267	4116
Vaccine Preventable Diseases	Adverse Event Following Immunisation	3	2	196	448	230	509	269
	Meningococcal Disease	1	2	24	35	58	48	67
	Pertussis	54	72	1606	1794	4881	2378	6000
	Pneumococcal Disease (Invasive)	7	12	384	395	456	489	564
	Rubella	1	0	8	12	11	12	11
Vector Borne Diseases	Barmah Forest	2	2	139	353	257	439	352
	Chikungunya	1	0	17	17	0	22	1
	Ross River	17	12	470	422	507	513	598
Zoonotic	Q fever	1	4	130	124	98	163	131

* 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](#) (external link).
- 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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