Communicable Diseases Weekly Report

Week 47, 20 November to 26 November 2022

In this report we provide information regarding diphtheria and a summary of notifiable conditions activity in NSW over the reporting period 47, 20 November to 26 November 2022

Data on **COVID-19** notifications can be found separately on the NSW Health Latest Updates on COVID-19 page.

For up-to-date information regarding the **Japanese encephalitis** outbreak and the NSW response, please visit the NSW Health Japanese encephalitis page.

Information on notifiable conditions is available at the 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.

Diphtheria

A case of toxigenic cutaneous diphtheria was notified in this reporting period in a man in his 50s from South Eastern Sydney Local Health District (Table 1). A toxin producing strain of *Corynebacterium diphtheriae* was isolated from a non-healing skin wound the man sustained overseas a number of years ago. It is unclear whether the diphtheria infection was a chronic infection acquired during his past overseas travel or acquired locally more recently. The man did not develop any symptoms of toxin mediated illness and was not found to be carrying the bacteria in his respiratory tract.

Close contacts of the man were followed up and provided with antibiotics to eliminate the bacteria from their nose and throat, preventing development of illness and potential spread from carriers within the social group. Contacts were also encouraged to ensure they were up to date with their diphtheria vaccinations and where relevant, provided with vaccines.

This case is the first cutaneous diphtheria case notified in NSW since 2019. Two cases of respiratory diphtheria were reported in unvaccinated children in June 2022; with one of the children developing severe toxin-mediated symptoms as a result of their infection.

These cases highlight the importance of vaccination in preventing diphtheria, which, prior to the introduction of the vaccine in the 1940s was a common cause of death among children. Thanks to high vaccination rates, respiratory diphtheria is now rare in Australia; however, it remains a common infection and cause of death in children in countries with low vaccination rates, and outbreaks are common in crowded settings such as refugee camps. Cases of cutaneous (skin) diphtheria occur occasionally in NSW, more commonly in adults over the age of 55. All cutaneous diphtheria cases notified to NSW health in recent years have been associated with overseas travel, highlighting the importance of seeking pre-travel vaccination advice from a healthcare provider, as booster doses of some routine vaccinations including diphtheria are recommended for people whose immunity may be waning.

The disease:

Diphtheria is a contagious and potentially life-threatening infection caused by toxin-producing strains of *Corynebacteria*, which can infect the upper respiratory tract (nose and throat) or the skin. Both *Corynebacterium diphtheria* and *Corynebacterium ulcerans* can produce the toxin which causes diphtheria.

Infection of the respiratory tract (respiratory diphtheria) by toxigenic *Corynebacteria*, can result in the formation of a membrane in the back of the throat which makes it hard to breathe and swallow.

Swelling of the lymph glands in the neck may also result in a characteristic 'bull neck'. Infection of the skin (cutaneous diphtheria) can result in large non-healing ulcers, often starting as smaller lesions. These occur most commonly on the legs, and cutaneous diphtheria is more common in warmer climates.

In a small number of cases the toxin may also enter the blood stream and result in damage to the heart (myocarditis) and nerves (neuropathy), which can also be fatal.

The vaccine:

Diphtheria vaccines protect against the toxin produced by the bacterium by stimulating the production of antibodies which act as antitoxin. Vaccinated people can be infected with *Corynebacteria*, without suffering the effects of the toxin and carriage of non-toxin producing *Corynebacteria* in the nose and throat is common. Asymptomatic carriage of toxin producing *Corynebacteria*, can also occur.

In NSW four doses of diphtheria vaccine are recommended and provided for free under the National Immunisation Program for children at 6 weeks, 4, 6, and 18 months of age, with boosters at 4 years and in the first year of high school. Booster doses are routinely recommended for people from 50 years of age, and may be recommended for travellers depending on the risk of diphtheria infection and access to healthcare services associated with their intended destination.

More information:

- NSW Health Diphtheria factsheet
- Data on diphtheria in NSW
- Australian Immunisation Handbook Diphtheria chapter

Summary of notifiable conditions activity in NSW

The following table summarises notifiable conditions activity over the reporting period alongside reports received in the previous week, year to date and in previous years (Table 1).

Table 1. NSW Notifiable conditions from 20 November to 26 November 2022, by date received*

		Weekly		Year to date				Full Year		
		This week	Last week	2022	2021	2020	2019	2021	2020	2019
Enteric Diseases	Campylobacter	250	267	11035	10700	8866	10287	12014	10054	11482
	Cryptosporidiosis	11	11	437	398	506	567	444	548	669
	Giardiasis	35	40	1251	1414	1731	3075	1504	1872	3329
	Hepatitis A	1	1	26	7	19	57	8	19	61
	Listeriosis	1	1	32	21	16	16	22	20	16
	Rotavirus	78	58	1116	326	470	1351	356	500	1777
	Salmonellosis	51	47	2693	2784	2598	3214	3097	2882	3552
	Shigellosis	16	16	413	52	480	783	60	494	867
	STEC/VTEC	2	1	132	109	91	63	126	115	79
	Typhoid	1	0	43	2	37	62	2	37	64
Other Diseases	Invasive Group A Streptococcus	6	9	82	-	-	-	-	-	-
	Monkeypox	1	0	56	-	-	-	-	-	-
Respiratory Diseases	Influenza	217	165	114638	90	7470	115010	124	7481	116402
	Legionellosis	4	4	232	190	143	137	214	171	154
	Respiratory syncytial virus (RSV)	190	198	4899	-	-	-	-	-	-
	Tuberculosis	18	15	469	509	548	537	558	625	589
Sexually Transmissable Infections	Chlamydia	555	596	23425	23532	24818	29527	25368	27239	32473
	Gonorrhoea	190	206	9318	7061	9112	10671	7620	9880	11686
Vaccine Preventable Diseases	Diphtheria	1	0	4	0	0	1	0	0	1
	Meningococcal Disease	2	0	28	21	20	55	23	22	59
	Mumps	1	1	15	6	54	52	6	56	58
	Pneumococcal Disease (Invasive)	8	9	500	368	304	630	386	343	690
Vector Borne Diseases	Dengue	5	2	142	4	76	424	4	76	456
	Malaria	3	3	37	6	24	66	8	25	73
	Ross River	16	5	676	633	1952	573	659	1990	596
Zoonotic Diseases	Leptospirosis	1	0	29	94	11	8	96	12	9
	Psittacosis	1	1	17	16	25	10	18	30	11
	Q fever	3	5	179	175	196	230	206	212	249

* Notes on Table 1: NSW Notifiable Conditions activity

- Only conditions which had one or more case reports received during the reporting week appear in the table.
- Due to the rapidly evolving nature of the situation, data on COVID-19 notifications can be found separately on the NSW Health Latest Updates on COVID-19 page.

- 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.
- Cases involving interstate residents are not included.
- Chronic blood-borne virus conditions (such as HIV, hepatitis B and C) are not included here. Related data are available from the Infectious Diseases Data, the HIV Surveillance Data Reports and the Hepatitis B and C Strategies Data Reports webpages.
- Notification is dependent on a diagnosis being made by a doctor, hospital or laboratory. Changes in awareness and testing patterns influence the proportion of patients with a particular infection that is diagnosed and notified over time, especially if the infection causes non-specific symptoms.