Communicable Diseases Weekly Report

Week 5, 29 January to 4 February 2017

In summary, we report:

- *Mycobacterium chimaera* – second confirmed case in NSW
- Meningococcal disease – vaccination campaign
- 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.

Mycobacterium chimaera

A 40 year old male heart surgery patient was the second patient in NSW to be confirmed with *Mycobacterium chimaera* infection following exposure to the rare bacterium from open heart surgery equipment. The second case follows NSW Health's alerts in August and December 2016 about this matter, and another alert on 23 January 2017 when NSW Health confirmed the state's first case, a woman in her 80s, who is recovering. Both cases underwent open heart surgery at the Prince of Wales Hospital in 2015, one of four NSW public hospitals that used the affected equipment up to August 2016. A media release from NSW Health confirming the infection in the second patient was issued on 31 January 2017.

Hospitals around the world have been affected by this issue which is thought to have arisen following contamination of heater-cooler devices during manufacture, and has been linked to *M. chimaera* infection in more than 70 patients worldwide. The first case in Australia was confirmed in Queensland in 2016. Heater-cooler devices are essential to conduct open heart surgery as they control the temperature of the blood and the heart during the period when blood circulation is conducted by the heart by-pass machine, so that complex heart surgery can be undertaken. Part of the design of heater-cooler devices results in water being aerosolised into the operating room. This means that it is essential the water is free from pathogenic organisms.

Mycobacterium chimaera is a slow growing bacterium usually found in water or soil, and previously has been rarely found as the cause of human lung infections in patients with pre-disposing illnesses such as cystic fibrosis. It is part of the family of "non-tuberculous mycobacteria" which has some similarities to the bacteria that cause tuberculosis. In relation to open heart surgery patients, the incidence of *Mycobacterium chimaera* infection is also very low, estimated to be less than 1 case per 10,000 operations. Patients who have been infected with *Mycobacterium chimaera* have presented with symptoms from 3 months to 5 years following surgery. *Mycobacterium chimaera* infection is not contagious from person to person.

The most common symptoms of *Mycobacterium chimaera* infection include persistent fever, unexplained weight loss and unusual or increasing shortness of breath. Some patients have also developed osteoarthritis, cholestatic hepatitis, nephritis, splenomegaly, or ocular disease. Treatment of the infection includes combination antimicrobial therapy and may require repeat surgery if prosthetic heart valves or grafts are involved.

For further information see the infectious disease alerts page.

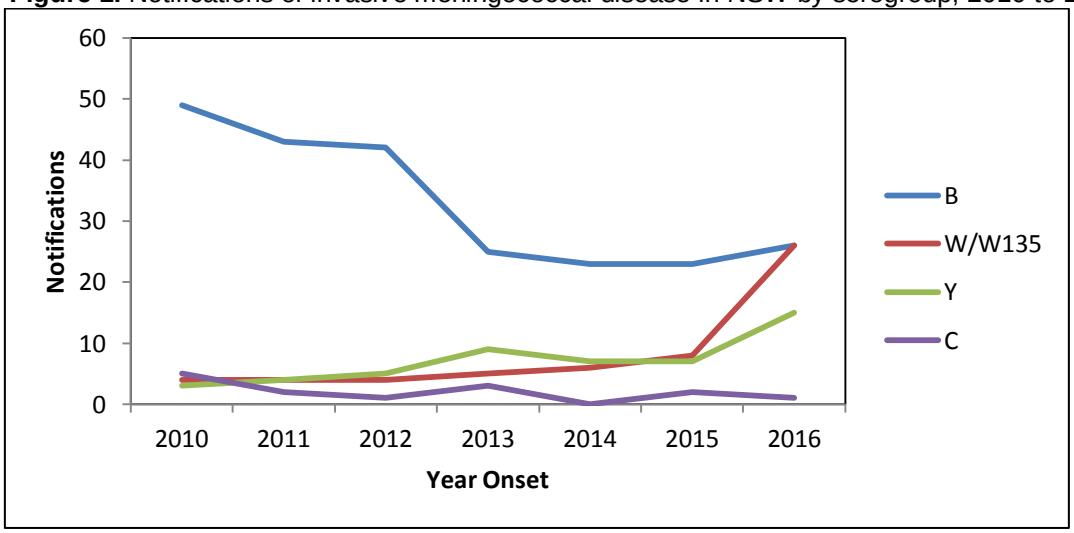
Meningococcal Disease

There has been an increase in the number of cases of invasive meningococcal disease caused by serogroup W (MenW) in Australia. Notifications of MenW almost tripled from 2015 (9) to 2016 (26) in NSW (Figure 1). The disease can occur in all ages including adults and may present with an

atypical clinical picture (such as septic arthritis, pneumonia, and epiglottitis). Cases can also present with the more typical symptoms and signs of meningitis or blood stream infection.

In response, NSW will be offering meningococcal ACWY vaccine (4vMenCV) to Year 11 and 12 students through a school-based vaccination program from 1 May 2017. This is expected to provide individual protection against four meningococcal strains, and contribute to herd immunity in the broader population by reducing meningococcal carriage in the vaccinated adolescent cohorts.

Figure 1. Notifications of invasive meningococcal disease in NSW by serogroup, 2010 to 2016.



Notifications where no serogroup was available are not included in this graph.

Nine cases of invasive meningococcal disease (IMD) have been reported in NSW to 4 February in 2017 with one death due to serogroup C. In the same period in 2016 there were 8 cases and two deaths.

Of the nine cases in 2017, three cases were caused by serogroup B, two by serogroup W, two by serogroup C and two by serogroup Y.

Meningococcal disease is caused by infection with the bacterium *Neisseria meningitidis*. The bacteria are spread through direct contact of mucous membranes with the organism, such as exposure to respiratory droplets from the nose and throat of an infected person.

Close contact may result in the bacteria colonising the throat of the exposed person but in most people this does not cause any disease. In only a very small proportion of people who have the bacteria in their throat, the bacteria spread from the throat to other parts of the body, causing IMD.

IMD typically involves meningitis (infection of the lining of the brain), septicaemia (infection of the blood) or both. Up to 10 per cent of IMD infections are fatal even with appropriate antibiotic treatment, and survivors may be left with long-term complications.

Vaccination against meningococcal C infection is included in the National Immunisation Program Schedule with vaccination due at 12 months of age. In addition to the NSW MenW Response Program described above, the combined vaccine against the A, C, Y and W serogroups is recommended for travellers to countries where infections with these organisms are more common and for some people with certain high risk conditions that predispose them to developing IMD such as people without a spleen.

A vaccine against some serogroup B strains is available in Australia; it is recommended for young children and adolescents but is not part of the National Immunisation Program.

Follow the links for more information on **meningococcal disease, vaccination and the NSW Meningococcal W Response Program.**

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 29 January to 4 February 2017, by date received*

		Weekly		Year to date			Full Year	
		This week	Last week	2017	2016	2015	2016	2015
Enteric Diseases	Cryptosporidiosis	44	33	186	119	97	1184	1040
	Giardiasis	88	76	367	412	372	3482	3412
	Rotavirus	12	23	96	89	49	745	1033
	Salmonellosis	112	116	545	764	692	4543	4022
	Shigellosis	5	9	33	28	22	306	172
	Typhoid	4	6	14	16	10	74	82
Respiratory Diseases	Influenza	194	165	839	473	358	35533	30301
	Legionellosis	2	4	11	9	15	133	96
	Tuberculosis	3	2	32	54	34	531	444
Sexually Transmissible Infections	Chlamydia	595	530	2885	2468	2406	25999	22548
	Gonorrhoea	227	185	991	630	547	7011	5400
Vaccine Preventable Diseases	Adverse Event Following Immunisation	2	2	12	13	11	253	186
	Meningococcal Disease	0	2	9	7	4	76	47
	Mumps	3	0	8	4	8	62	64
	Pertussis	150	135	753	1677	634	10941	12081
	Pneumococcal Disease (Invasive)	3	3	25	30	26	543	494
Vector Borne Diseases	Dengue	9	12	40	42	47	465	343
	Malaria	1	1	8	5	3	59	47
	Ross River	82	84	427	46	130	532	1637
Zoonotic Diseases	Leptospirosis	2	0	2	2	0	13	15
	Q fever	3	3	17	27	23	229	264

*** 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.