

Communicable Diseases Weekly Report

Week 46, 11 November to 17 November 2018

In summary, we report:

- [Pertussis](#) – increase in notifications
- [Acute rheumatic fever and rheumatic heart disease](#) – quarterly surveillance data update
- [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.

Pertussis

A total of 228 pertussis (whooping cough) cases were notified in this reporting week ([Table 1](#)). This brings the total number of pertussis cases notified for the year to date to 4,831, similar to the same period in 2017. There were, however, 790 pertussis cases notified in October 2018, which is the highest monthly total since December 2016 ([Figure 1](#)). As this may indicate the start of a new epidemic of pertussis activity a [community alert](#) was issued.

Pertussis, commonly known as ‘whooping cough’, is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis*. Pertussis affects individuals of all ages, but is most severe and can be fatal in small babies, particularly those too young to be vaccinated and those that are unvaccinated. Pertussis occurs all year round, but tends to be more common in the warmer months of spring through summer.

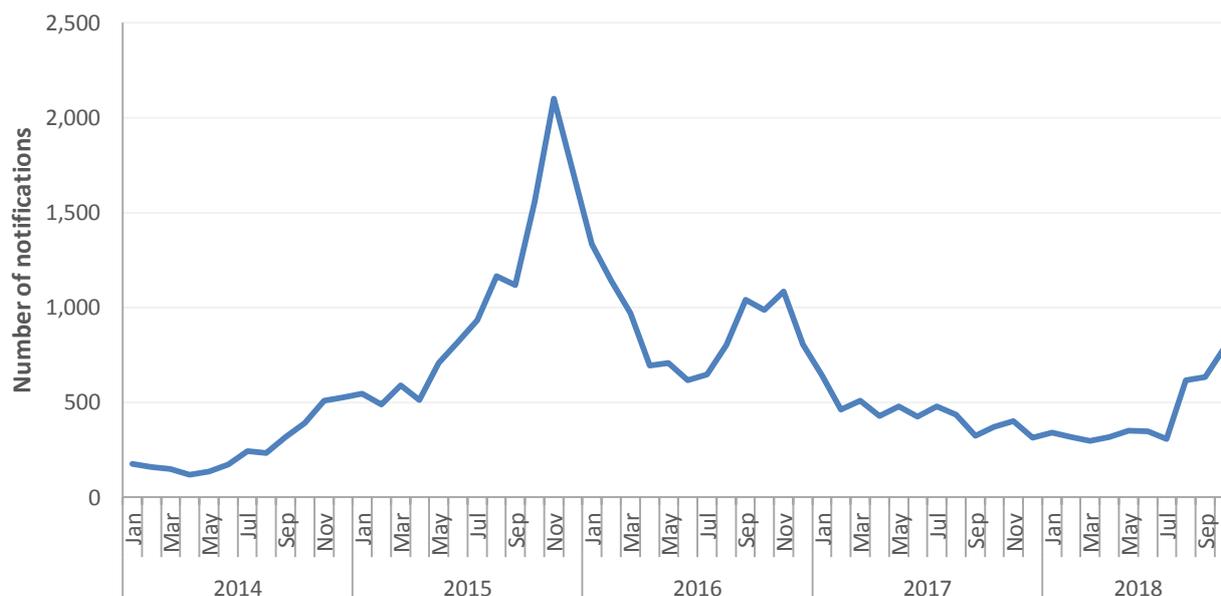
Pertussis usually begins like a cold with a blocked or runny nose, tiredness and a cough. As the illness progresses, coughing worsens often resulting in severe bouts of uncontrollable coughing (paroxysms), which can be followed by vomiting, or gasping for breath which causes the characteristic ‘whooping’ sound. The cough can last many weeks and is often worse at night.

The ‘whoop’ is often absent in infants, particularly newborns, who are more likely to present with gagging, gasping, apnoea (cessation of breathing), or cyanosis (turning blue), or less specific signs such as poor feeding. Older children and adults, particularly those who have previously received a vaccine, may develop milder illness including a cough that persists for weeks.

Pertussis is spread through the respiratory droplets expelled when an infectious person coughs. If not treated early in the illness, people with whooping cough are infectious for the first three weeks of illness. The illness spreads very easily among families and in childcare and school settings. An older sibling or adult family member is often the source of infection for young children and infants.

Pertussis is a vaccine preventable disease with vaccination recommended and provided as part of the National Immunisation Program at 6 weeks, and four and six months of age for the primary course; with booster doses at 18 months, 4 and 12 years of age, and during every pregnancy. Booster doses are important as immunity to pertussis wanes with time since last dose.

Waning immunity is one of the contributing factors to the periodic pertussis epidemics which usually occur every 3-4 years. The last epidemic year in NSW was 2015. Routine childhood vaccination and strategies such as maternal pertussis vaccination, which provides antibody protection to the unborn child from the mother via the placenta, aim to protect the most vulnerable members of the community from pertussis, particularly in epidemic years; namely children aged less than 6 months of age.

Figure 1. NSW Pertussis notifications by month onset, 01 January 2014 to October 2018.

The maternal pertussis vaccination program was commenced in NSW in April 2015, following increases in notifications in the latter half of 2014. In July 2018 the Federal Government added maternal pertussis vaccination to the National Immunisation Program.

Since the introduction of the program in NSW, cases of pertussis among children aged less than 6 months have decreased significantly. Numbers of cases among children in this age group during the peak of the most recent epidemic were almost 10% lower than those seen in the previous epidemic peak in early 2011 and 45% lower compared to the epidemic peak of 2009. There have been no deaths due to pertussis in children aged less than 6 months since the introduction of this program.

For more information on pertussis follow the links to the pertussis [factsheet](#), pertussis [notification data](#), and the [NSW Annual Vaccine Preventable Disease Report](#) for 2017.

More information on pertussis vaccination, including maternal pertussis vaccination can be found in the new digital [Australian Immunisation Handbook](#), and on the [NSW Health Immunisation](#) pages.

Acute rheumatic fever and rheumatic heart disease

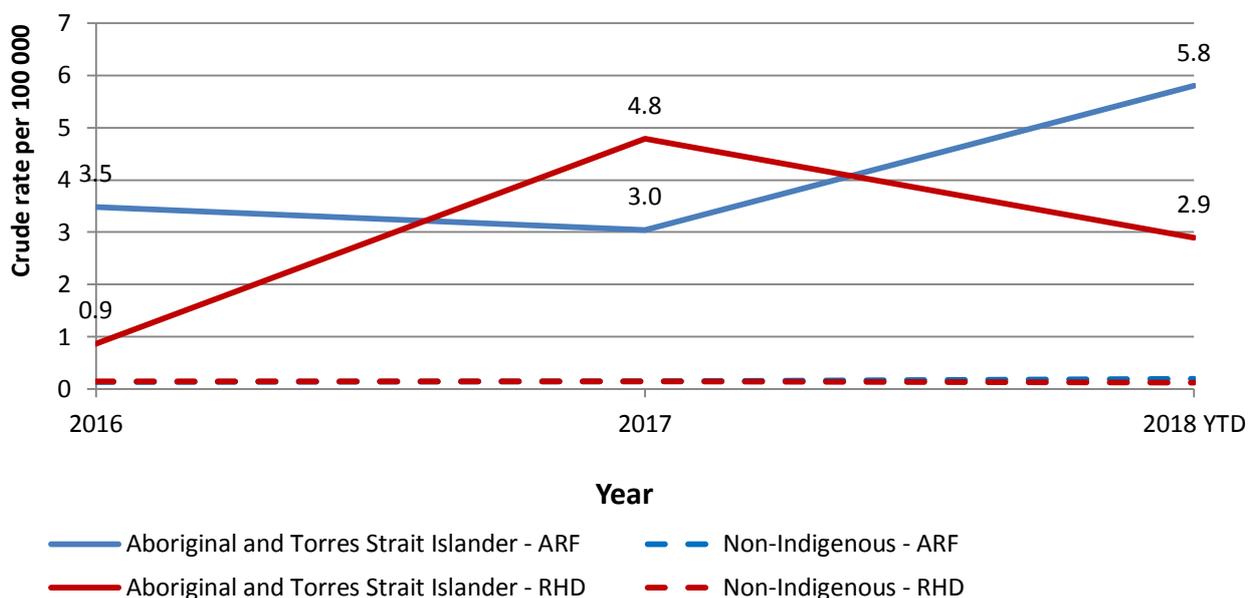
Acute rheumatic fever (ARF) and rheumatic heart disease (RHD) became notifiable in NSW on 2 October 2015. There have been 62 notifications of ARF and 50 notifications of RHD from that time up to the end of the third quarter in 2018 (30 September 2018). The overall crude notification rate for this period was 0.2 cases per 100 000 population per year for both conditions. The rate of ARF notifications increased from 0.2 cases per 100 000 population in 2016 and 2017 to 0.4 in 2018 (year to 30 September). This is most likely due to improvements in case finding and notification rather than an increase in disease incidence.

The majority of cases were in children and young adults with more than 80% of ARF notifications and 70% of RHD notifications in people aged less than 25 years of age.

People living in disadvantaged conditions and with poor access to health services are at higher risk of ARF and RHD. Consistent with reports from other Australian states and territories, Aboriginal and Torres Strait Islander people in NSW were at substantially higher risk of both ARF and RHD ([Figure 2](#)). The average crude rate of notification of ARF in Aboriginal and Torres Strait Islander

people was more than 25 times higher than for non-Indigenous people and 20 times higher for RHD.

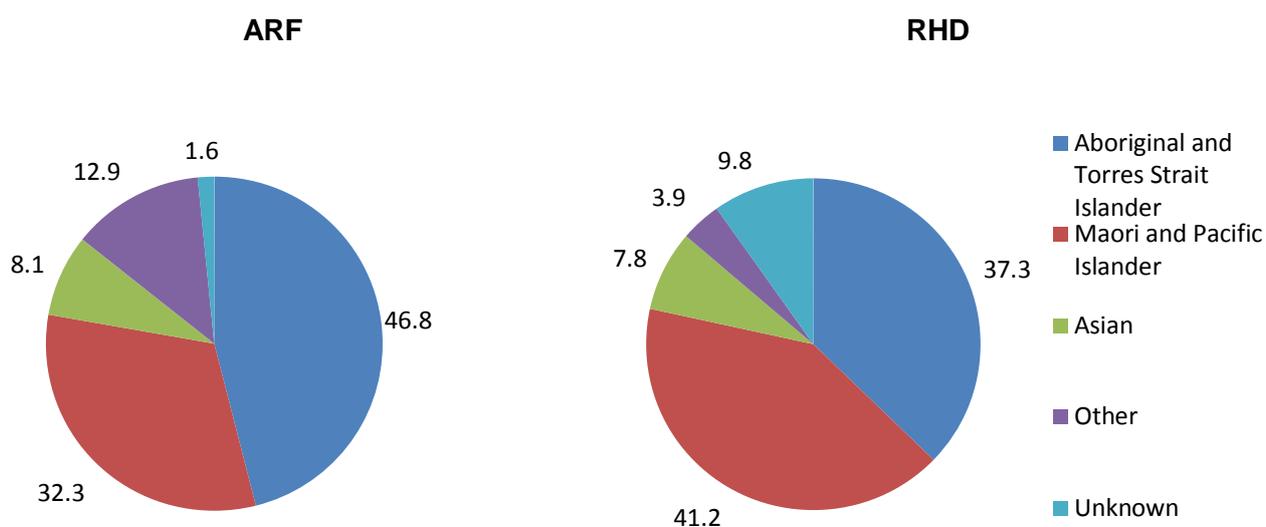
Figure 2. Crude rate of notification per 100 000 population of ARF and RHD in NSW by Indigenous status and year, 1 January 2016-30 September 2018



Compared with other jurisdictions in Australia, NSW has a higher proportion of cases in people who are not Aboriginal. People reporting Maori and Pacific Island ancestry accounted for 32% of cases of ARF and 41% of cases of RHD (Figure 3). People born outside of Australia, particularly those from South-east Asia and Africa may also be at higher risk.

Analysis of ARF and RHD cases by place of residence showed that they were distributed across both metropolitan local health districts (LHD) and rural and regional LHDs in NSW. Aboriginal and Torres Strait Islander cases were more commonly reported from rural and regional LHDs, while most cases in people reporting Maori and Pacific Island ancestry lived in metropolitan LHDs.

Figure 3. Proportion of ARF and RHD notifications by ancestry, 1 October 2015-30 September 2018



ARF is a rare but serious inflammatory complication of infection with group A *Streptococcus* (GAS), which commonly presents as a sore throat. Polyarthritits (pain and swelling in several joints) and fever are the most common symptoms of ARF. Other signs and symptoms may include carditis

(inflammation of the heart), chorea (jerky limb movements arising from inflammation of the brain), erythema marginatum (a distinctive skin rash), and subcutaneous nodules. Episodes of ARF can cause permanent damage to the heart valves leading to RHD.

There is no specific treatment for an acute episode of ARF. Supportive treatment can be given with the aim of reducing joint pain, swelling, and fever. However, people diagnosed with ARF require long-term follow-up, including administration of benzathine penicillin G every 21-28 days for a minimum of 10 years. This is given to prevent repeat GAS infections, which may lead to repeat episodes of ARF and worsening valvular disease. People with ARF also require annual medical and dental reviews, and an echocardiogram every two years. People with RHD may require more frequent clinical review.

NSW Health has established a register for people diagnosed with ARF and RHD to assist patients and their doctors manage adherence to regular penicillin prophylaxis and clinical reviews. Notification is required for new cases of ARF in people of all ages and RHD in those aged less than 35 years. Notification is the first step in accessing the NSW RHD Register for both new and existing cases.

Timely and appropriate treatment of sore throats and skin infections in high-risk populations, such as Aboriginal and Torres Strait Islander people and Maori and Pacific Islander people, can reduce the risk of ARF. The NSW Health guideline GL2014_21, [Infants and children: Acute management of sore throat](#) recommends the use of antibiotics to prevent ARF in high risk populations.

Further information on these conditions is available from [NSW Health](#) and [RHD Australia](#).

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 11 November - 17 November 2018, by date received*

		Weekly		Year to date			Full Year	
		This week	Last week	2018	2017	2016	2017	2016
Bloodborne Diseases	Hepatitis C - Newly Acquired	1	0	24	34	25	36	25
Enteric Diseases	Cryptosporidiosis	10	12	645	1196	955	1266	1184
	Giardiasis	48	59	2389	2863	3173	3134	3480
	Hepatitis A	1	0	78	61	34	72	41
	Hepatitis E	1	0	15	19	16	20	16
	Rotavirus	6	15	722	2143	586	2319	750
	STEC/VTEC	1	1	49	45	49	53	65
	Salmonellosis	57	69	2921	3330	4027	3680	4533
	Shigellosis	23	22	433	203	273	235	310
	Typhoid	1	0	50	52	32	55	37
Respiratory Diseases	Influenza	186	174	16021	103077	34704	103853	35540
	Legionellosis	4	4	129	125	117	138	134
	Tuberculosis	9	17	463	478	457	542	533
Sexually Transmissible Infections	Chlamydia	567	505	27727	25784	23231	28972	25987
	Gonorrhoea	177	168	9486	8158	6174	9170	6992
	LGV	1	3	75	44	55	50	60
Vaccine Preventable Diseases	Adverse Event Following Immunisation	6	6	276	262	239	279	262
	Meningococcal Disease	3	0	62	85	64	91	70
	Pertussis	228	232	4833	4889	9681	5365	10956
	Pneumococcal Disease (Invasive)	10	21	615	644	500	683	545
Vector Borne Diseases	Barmah Forest	3	2	69	118	34	127	40
	Dengue	8	6	244	275	441	306	485
	Malaria	2	0	62	65	49	68	59
	Ross River	5	7	529	1602	443	1653	595
Zoonotic Diseases	Q fever	2	3	199	184	197	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.