Communicable Diseases Weekly Report

Week 39, 26 September to 2 October 2016

In summary, we report:

- HIV – quarter 2 2016 surveillance update
- Acute Rheumatic Fever and Rheumatic Heart Disease – two new cases
- 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.

HIV

From January to June 2016, 170 people were newly diagnosed with HIV infection; 3% fewer than the average count for January to June 2010-2015 (n=175) (Figure 1). Of these 170 people, 82% (n=139) were reported to be men who have sex with men (MSM), 3% fewer than the average count for MSM for January to June 2010-2015 (n=143). Of the 139 MSM newly diagnosed in January to June 2016, 5% (n=7) had been tested as part of eligibility screening for pre-exposure prophylaxis (PrEP). Screening for PrEP as the reason for HIV testing was added in 2016 to the HIV notification form.

Of the 170 NSW residents notified with newly diagnosed HIV infection from January to June 2016, 92% (n=156) were male, 8% (n=13) were female and fewer than 1% were transgender (n=1), similar to previous years. Four percent (n=7) were reported to be Aboriginal or Torres Strait Islander people; this is a slightly higher proportion than in previous years and is being monitored closely.

Among the 170 NSW residents newly diagnosed from January to June 2016, HIV risk exposure was reported as male to male sex for 82% (n=139), heterosexual sex for 15% (n=25), another type or unknown exposure for 2% (n=3), injecting drug use (PWID) for 1% (n=2) and vertical transmission for <1% (n=1; occurred outside of Australia). This is a similar breakdown of HIV risk exposures as was reported for people newly diagnosed in the same period in 2010-2015.

The clinical characteristics of the 170 people newly diagnosed with HIV infection in the first six months of 2016 include the following:

- 20% (n=34) had evidence of advanced stage infection, compared with 15% of new diagnoses in the same period in 2010-2015;
- 38% (n=65) had a CD4 count at diagnosis of less than 350 cells/μL, indicative of late diagnosis, compared with 34% of those diagnosed in the same period in 2010-2015; and
- 45% (n=76) had evidence of early stage infection at diagnosis compared with 46% of new diagnoses in the same period in 2010-2015.

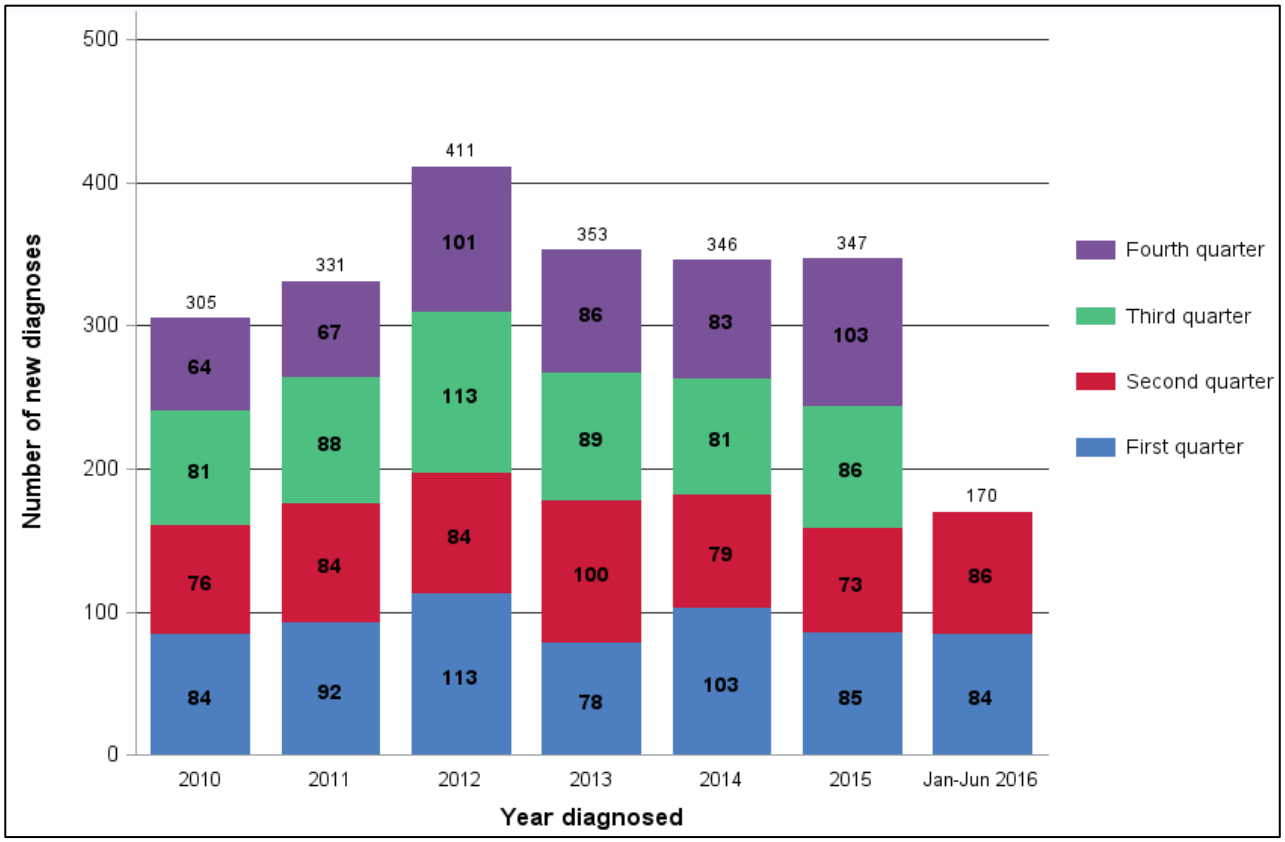
The epidemiology of new diagnoses in 2016 should be considered in the context of:

1) a marked and continued increase in HIV testing, for example, from January to June 2016, there were 12%, 16%, 20% and 26% more HIV serology tests performed in NSW than in the same period 2015, 2014, 2013 and 2012 respectively, as well as increased testing targeted at high risk people in publically funded sexual health clinics;
2) commencement of enrolment on 1 March 2016 of people at high risk of acquiring HIV into a population level PrEP impact study (EPIC-NSW) with almost 2000 participants enrolled to

30 June 2016 and likely bringing forward in time screening of many of those at the highest risk of HIV acquisition; and

3) a greater proportion of people newly diagnosed in the first half of 2016 having evidence of late or advanced stage diagnosis compared with the previous six years.

Figure 1: Number of NSW residents notified with newly diagnosed HIV infection from 1 January 2010 to 30 June 2016



Data source: Notifiable Conditions Information Management System, Health Protection NSW, extracted 8 August 2016

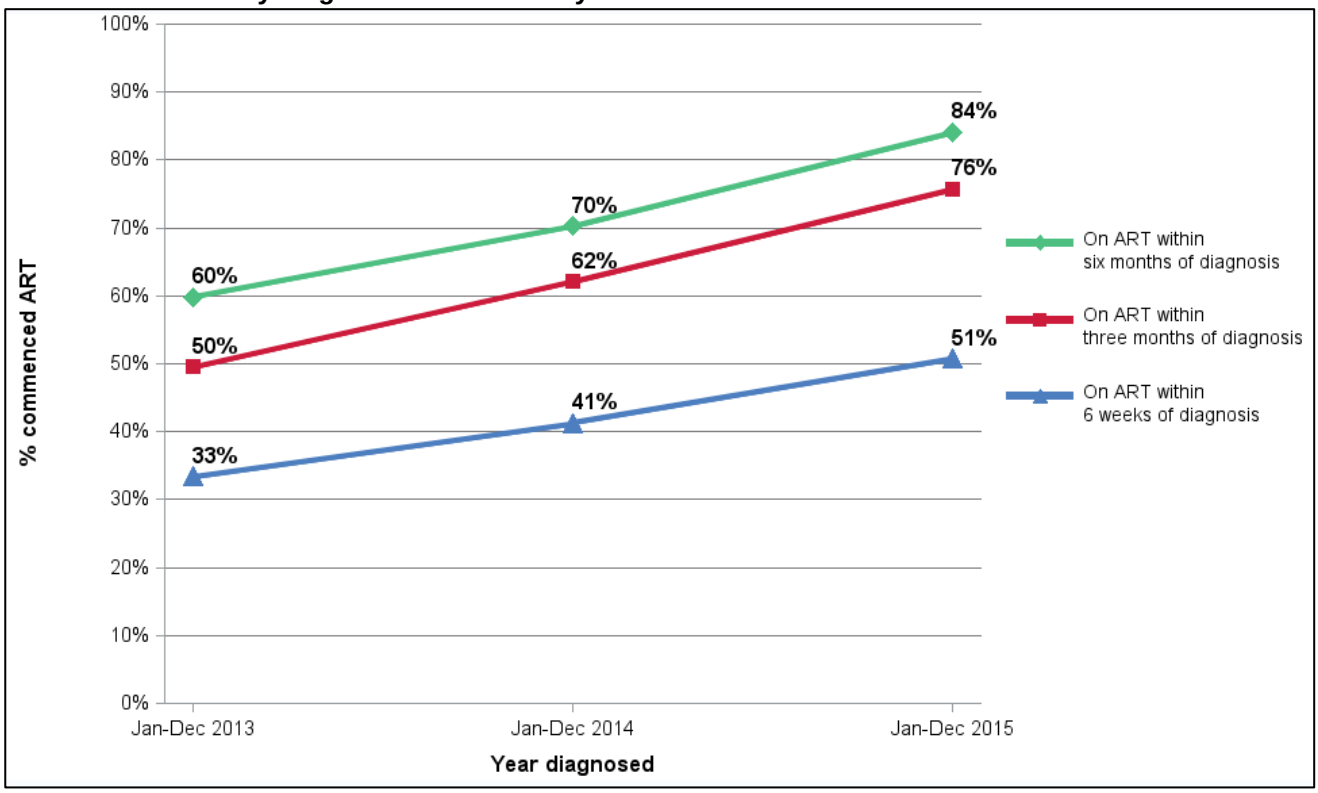
The fact that the number of early diagnoses did not increase in the first six months of 2016 despite the large increase in testing suggests that the rate of HIV transmission has not increased, and the higher proportion of late diagnoses indicates that people living with HIV for some years but previously undiagnosed have been tested resulting in little overall change in the rate of HIV diagnosis.

In 2013, HIV surveillance in NSW was enhanced to collect information six months after diagnosis on the newly diagnosed person's retention in care, antiretroviral therapy (ART) commencement, latest HIV viral load and CD4 count. In mid-2015 strong evidence emerged that starting ART as early as possible after diagnosis irrespective of CD4 count maximised individual health gain (START study). Since 2016 a key indicator to monitor progress against the *NSW HIV Strategy 2016-2020* is the proportion of NSW residents newly diagnosed who commence ART within six weeks of diagnosis. The latest available six months follow up data are for those newly diagnosed in quarter 4 2015. Of the 103 new diagnoses in October to December 2015, 57% (n=51) had commenced ART within six weeks, 75% (n=77) within three months and 83% (n=85) within six months of diagnosis.

Since 2013, increasing proportions of people newly diagnosed in NSW each year have commenced ART within 6 weeks of diagnosis. Of 1046 NSW residents newly diagnosed with HIV infection from 1 January 2013 to 31 December 2015, 42% (n=437) had commenced ART within six weeks of diagnosis. This comprises 33% of people newly diagnosed in 2013, 41% of those

diagnosed in 2014 and 51% of those diagnosed in 2015 (Figure 2). More detailed data can be found in the NSW HIV Strategy 2016 – 2020 Quarter 2 2016 Data Report.

Figure 2: ART commencement status at six weeks, three and six months post diagnosis, among 1046 NSW residents newly diagnosed from January 2013 to December 2015



HIV is a retrovirus that was first identified in 1983 as the cause of Acquired Immune Deficiency Syndrome (AIDS). HIV damages the immune system so that organisms that don't normally cause disease in HIV-negative people can cause severe illness. Additionally certain types of cancer can develop. If these infections or cancers occur in a person with HIV infection, the person is considered to have AIDS. AIDS is now a rare event due to widespread uptake of ART, which is highly effective in preventing immune deficiency in people infected with HIV.

ART is safe and effective and has made HIV a manageable chronic disease. Recent research has proven that ART initiated immediately after HIV diagnosis results in better health outcomes than delaying ART initiation until the CD4 count falls or symptoms develop. ART reduces the infected person's HIV viral load and greatly reduces the risk of transmitting HIV to others. People living with HIV on ART can now have a similar life expectancy as someone who is HIV-negative.

HIV is predominantly transmitted by unprotected anal or vaginal sexual intercourse. It is also spread via contaminated drug injecting equipment and from mother to child during pregnancy, child birth or breast feeding. HIV can also be acquired where there is poor infection control in health care settings or other settings where skin penetration occurs such as with tattooing or body piercing.

HIV can be prevented by consistent condom use, not sharing injecting equipment, people with HIV taking treatment (treatment as prevention), pre-exposure prophylaxis (PrEP) taken by HIV-negative people at high risk of acquisition of HIV, and post-exposure prophylaxis (PEP) taken within 72 hours of exposure to HIV.

Follow the links for more information on HIV and on HIV resources and data .

Acute Rheumatic Fever and Rheumatic Heart Disease

One case of acute rheumatic fever (ARF) and one case of rheumatic heart disease were reported in New South Wales (NSW) this week.

There have been 20 notifications of acute rheumatic fever (ARF) and rheumatic heart disease (RHD) in NSW since the addition of these conditions to the list of notifiable diseases on 2 October 2015. Half of the notifications were persons diagnosed with ARF, seven were persons diagnosed with RHD and three in persons with both ARF and RHD at first notification.

Eighty per cent of cases were in people aged less than 25 years, with half of the cases reported in people aged between 5 and 14 years. Seventy-five per cent of notifications were in people born in Australia with the remainder being born in New Zealand (10%), Asia (10%) and the Pacific Islands (5%). However, 85% of cases occurred in people from high risk populations: 35% in Aboriginal and Torres Strait Islander people, 40% in people reporting Maori and Pacific Islander ancestry and 10% in people born in other countries with a high RHD prevalence.

ARF is a rare but serious inflammatory complication of infection with group A streptococcal infection (GAS) and may follow a sore throat. Polyarthritis (pain and swelling in several joints) is the most common symptom 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. Fever is also typically present. Episodes of ARF can cause permanent damage to the heart valves leading to RHD.

ARF most commonly affects children aged 5 – 14 years, and higher rates of ARF and RHD occur in some groups, including Aboriginal and Torres Strait Islander people, Maori and Pacific peoples and people born outside of Australia, particularly those from South-east Asia and Africa. Higher rates are also seen in women and in people living in disadvantaged conditions and where access to health services is poor.

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 doctor and dental review 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 doctor manage adherence to regular penicillin prophylaxis and clinical reviews. Notification of people diagnosed with ARF and RHD aged less than 35 years is the first step in accessing the NSW RHD Register.

Further information is available from NSW Health and RHD Australia.

Summary of notifiable conditions activity in NSW

The following table (Table 1) summarises notifiable conditions activity over the reporting period.

Table 1. NSW Notifiable conditions from 26 September to 2 October 2016, by date received *

		Weekly		Year to date			Full Year	
		This week	Last week	2016	2015	2014	2015	2014
Enteric Diseases	Cryptosporidiosis	11	12	853	691	308	1038	429
	Giardiasis	34	45	2799	2613	2221	3415	2942
	Rotavirus	11	12	363	511	412	1036	714
	STEC/VTEC	1	3	35	14	27	29	31
	Salmonellosis	48	65	3608	3096	3275	4042	4273
	Shigellosis	3	7	230	133	162	172	212
	Typhoid	4	0	60	62	68	82	88
Respiratory Diseases	Influenza	1094	1838	31405	27147	19401	30305	20888
	Legionellosis	2	2	100	80	51	96	72
	Tuberculosis	2	7	342	324	349	445	475
Sexually Transmissible Infections	Chlamydia	411	494	19427	16726	17331	22548	22899
	Gonorrhoea	84	98	5138	4047	3643	5400	4876
Vaccine Preventable Diseases	Adverse Event Following Immunisation	1	6	192	142	209	186	258
	Meningococcal Disease	5	1	60	33	24	46	37
	Mumps	3	1	39	42	67	64	82
	Pertussis	199	260	8082	6671	1678	12083	3051
	Pneumococcal Disease (Invasive)	20	11	410	375	382	495	511
	Rubella	1	0	9	5	7	6	10
Vector Borne Diseases	Ross River	2	9	370	1445	469	1638	673
	Zika virus	1	1	23	1	4	1	4
Zoonotic Diseases	Q fever	4	8	160	187	138	265	190

*** Notes on Table 1: NSW Notifiable Conditions activity**

- Data cells represent the number of notifiable disease 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 in the current reporting week 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.