Communicable Diseases Weekly Report

Week 28 6 July 2015 -12 July 2015

In summary, we report:

- **Human immunodeficiency virus (HIV)**–NSW update
- **Creutzfeldt-Jakob disease** –NSW update
- **Summary of notifiable conditions activity in NSW**

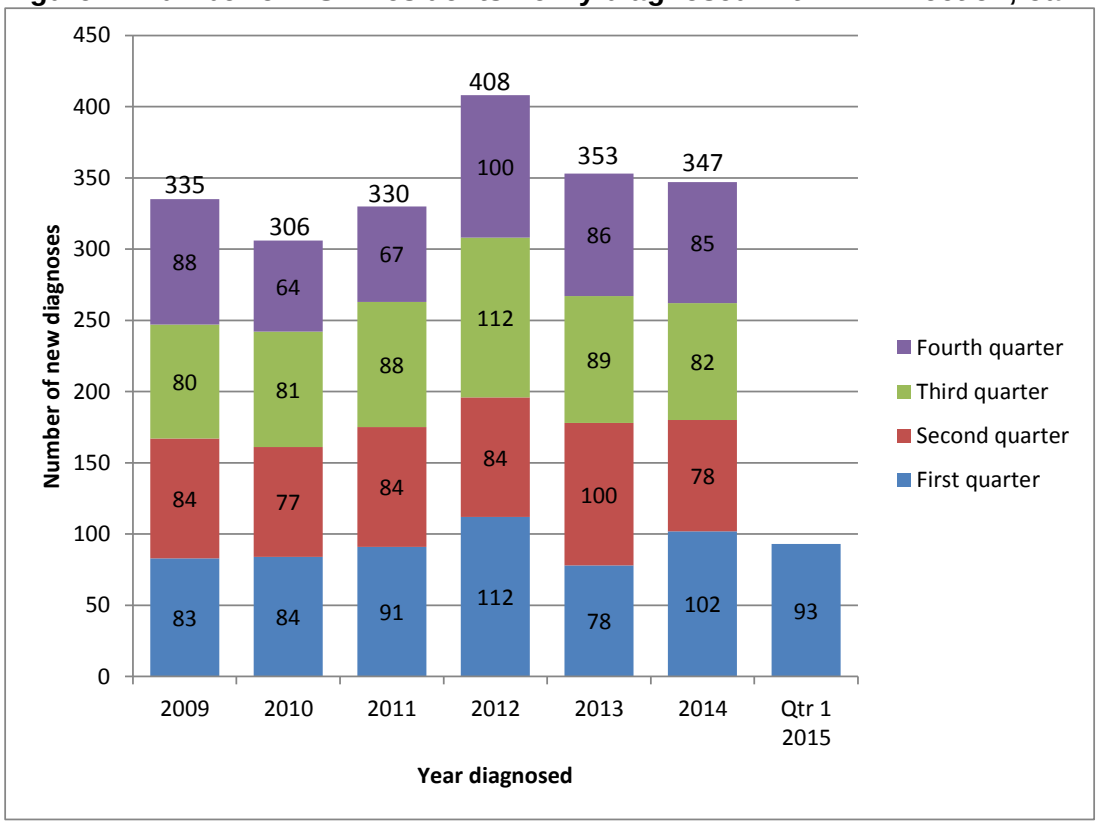
For further information on infectious diseases and alerts see the Infectious Diseases webpage.
Follow the A to Z of Infectious Diseases link for more information on specific diseases.
For links to other surveillance reports, including influenza reports, see the NSW Health Infectious Diseases Reports webpage.

Human immunodeficiency virus (HIV) 1 January to 31 March 2015

From 1 January to 31 March 2015 (quarter 1), 93 NSW residents were newly diagnosed with HIV infection and notified to NSW Health (Figure 1), a 17 per cent (%) decrease compared with the first quarter of 2012, despite a 12% increase in HIV testing in NSW in the same period. It is similar to the 2009 to 2014 quarter 1 average of 92 new diagnoses.

Of these 93 new diagnoses in quarter 1 2015, 82 (88%) were male, a lesser proportion compared with the 2009 to 2014 quarter 1 average of 95%. Ten (11%) were female which was a greater proportion compared with the 2009 to 2014 quarter 1 average of 5%. One was transgender. Twenty seven (29%) were aged 20 to 29 years, 31 (33%) were 30 to 39 years, 19 (20%) were 40 to 49 years and 16 (17%) were 50 years or over, a very similar age distribution to previous years.

Figure 1: Number of NSW residents newly diagnosed with HIV infection, Jan 2009-Mar 2015

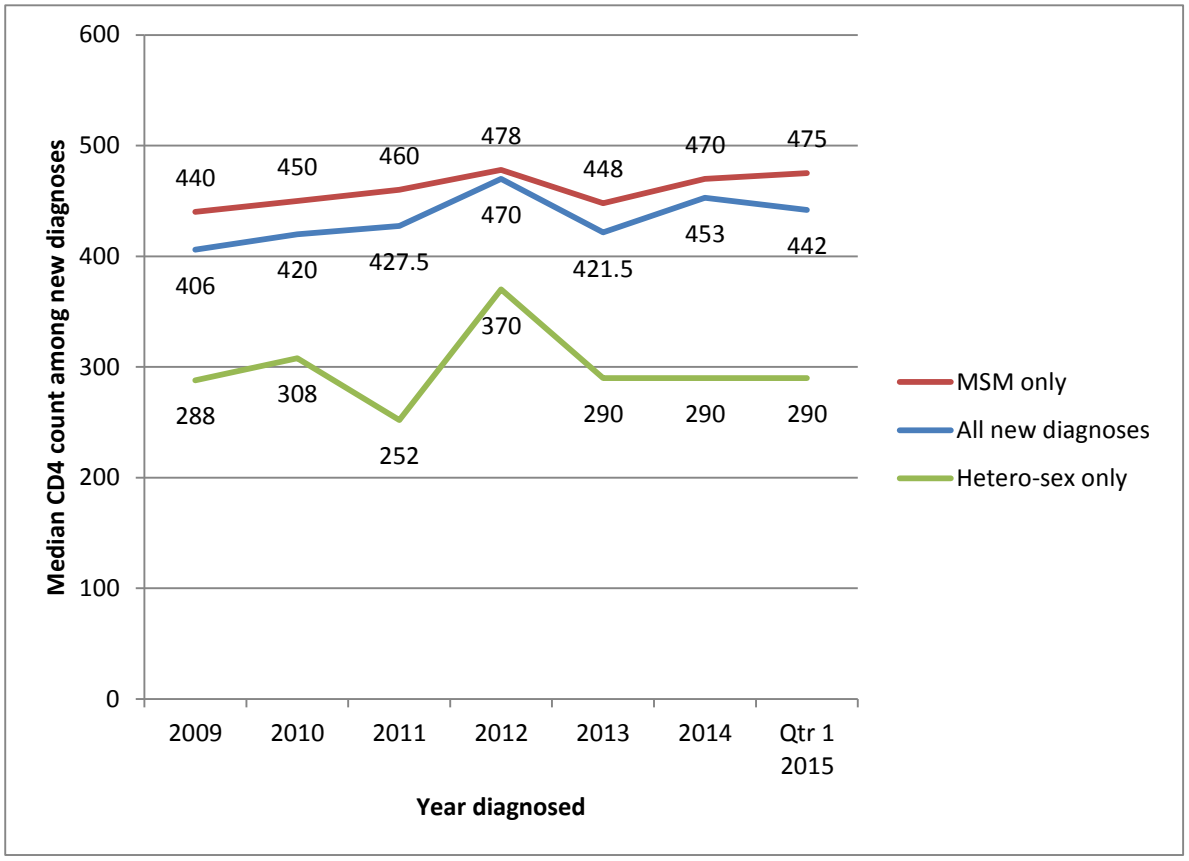


Data source: NSW HIV/AIDS database, Health Protection NSW, extracted 8 May 2015

Of the 93 new diagnoses in quarter 1 2015, 62 (67%) reported being men who have sex with men (MSM), less than the 2009 to 2014 quarter 1 average of 82%. A further 18 (19%) people newly diagnosed reported acquiring HIV through heterosexual sex, more than the 2009 to 2014 quarter 1 average of 14%. Two (2%) reported being a person who injected drugs (PWID). The HIV risk exposure for 11 (12%) new diagnoses was unknown at the time of reporting.

The median CD4 count at diagnosis of NSW residents newly diagnosed with HIV infection in quarter 1 2015 is similar to that in previous years both among those reporting to be MSM and for all new diagnoses. The median CD4 count at diagnosis among those reporting heterosexual exposure to HIV remains low (Figure 2) indicating that in general the diagnosis was made late in infection in this group.

Figure 2: Median CD4 count (cells/μL) at diagnosis for all NSW residents newly diagnosed with HIV and for MSM and heterosexual risk exposure groups[1], Jan 2009 to Mar 2015



Data source: NSW HIV/AIDS database, Health Protection NSW, extracted 8 May 2015.

[1]The median CD4 count at diagnosis for other HIV risk exposure groups such as being a person who injected drugs (PWID) are not reported separately due to very low count numbers.

Of the 93 new diagnoses in quarter 1 2015, 45 (48%) were diagnosed by general practitioners not accredited to prescribe antiretroviral therapy nor specialised in HIV (GP non-s100). This is greater than the 2009 to 2014 quarter 1 average of 32% of new diagnoses being made by this clinical group. Sexual health clinics (SHC) (which also includes linked community testing sites) made 21 (23%) new diagnoses, hospital located doctors made 16 (17%) new diagnoses and GP s100 doctors (GP HIV specialist) made 8 (9%) new diagnoses in the period.

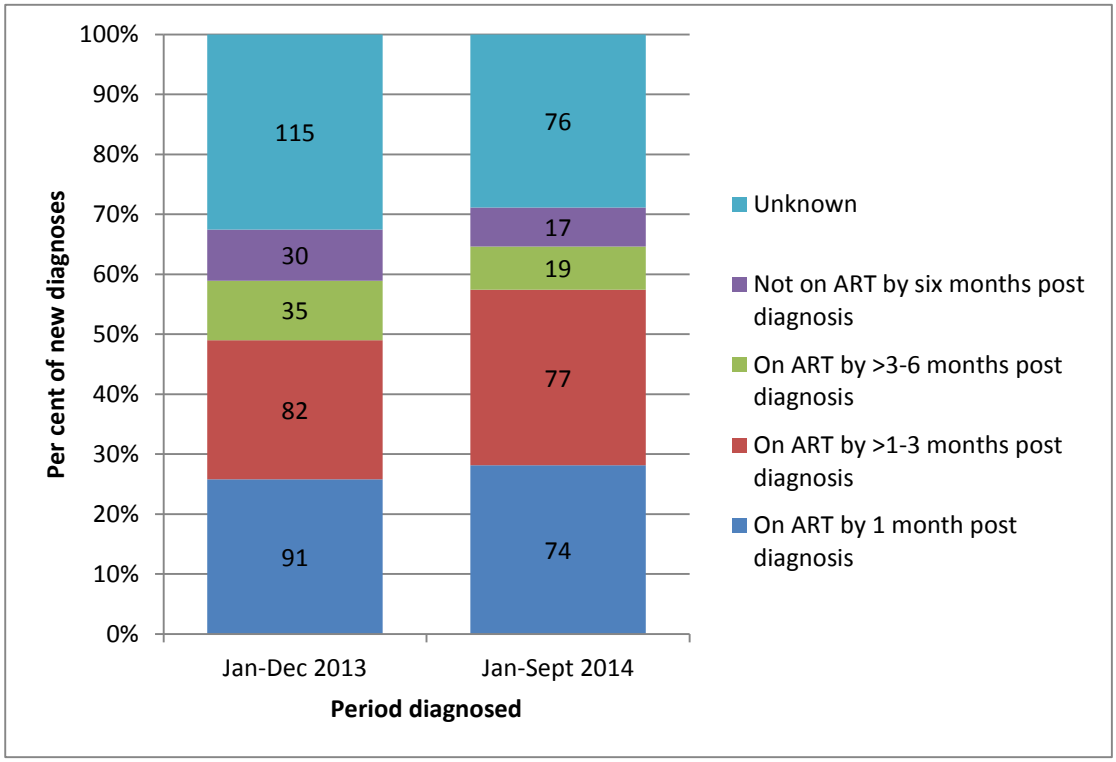
Since 2013, HIV surveillance in NSW was enhanced to:

a) at the time of diagnosis, collect from doctors additional information on the patient's HIV viral load, antiretroviral therapy (ART) commencement or deferral, and;
b) at six months post diagnosis, follow up on the patient via their doctor to collect information on retention in care, ART commencement, pre-ART and latest HIV viral load and CD4 count.

So far NSW residents newly diagnosed with HIV infection from 1 January 2013 to 30 September 2014 have been followed up six months post diagnosis via their managing doctor. The return rate of these forms was high with 336 of 353 (95%) returned for the 2013 new diagnoses cohort and 223 of 263 (85%) being returned for new diagnoses made in January 2014 to September 2014.

Of 353 NSW residents newly diagnosed with HIV infection in the year 2013, 208 (59%) were reported to have commenced ART within six months of diagnosis (Figure 3). Of the 263 NSW residents newly diagnosed with HIV infection in the first three quarters of 2014, 170 (65%) were reported to have commenced ART within six months of diagnosis (Figure 3).

Figure 3: Per cent of NSW residents newly diagnosed with HIV infection in 2013 (n=353) and the first three-quarters of 2014 (n=263) who were on ART by six months post diagnosis, based on notification form and six month post diagnosis data.



Data source: NSW HIV notification and follow up data, Health Protection NSW, extracted 8 May 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 healthy 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 usually occurs as a late stage of HIV infection on average 10 years after initial infection, but can occur earlier.

Most people have either no symptoms or only mild symptoms when they are first infected with HIV. However some people develop a flu-like illness with fever, sore throat, swollen glands or a rash a few weeks after infection. These symptoms disappear without treatment after a few days, and people with HIV infection may remain without symptoms for many years. However, people with

untreated HIV infection can transmit the virus to others. Infectiousness is very high in the period shortly after initial infection when the virus is replicating but before an immune response occurs.

HIV is predominantly transmitted by unprotected 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.

In Australia, men who have sex with men are the highest risk group for HIV infection. Other risk groups include people from countries where HIV prevalence is high and their sexual partners, people who inject drugs, and people who travel to or work in high prevalence countries. HIV can be prevented by consistent condom use and by not sharing injecting equipment.

The first highly active antiretroviral treatments for HIV infection became available in 1996 following the use of AZT from the late 1980s. The early drugs had severe side effects and the virus frequently developed resistance to them. More recently developed anti-retroviral treatment regimens for HIV infection do not cause side effects in most people and several different drugs are combined into the regimen so that resistance does not emerge if they are taken properly. Currently people with HIV infection can have a life expectancy that is only 6 to 8 years less than those who do not have HIV.

The *NSW HIV Strategy 2012-2015 A New Era* (the Strategy) was launched in December 2012. The goal of the Strategy is to work towards the virtual elimination of HIV transmission by 2020. The impetus behind the Strategy has come from recent evidence showing that the people with HIV infection who are on HIV treatment have a greatly reduced risk of transmitting HIV to their sexual partners. The Strategy focuses on: promoting condom use, safe injecting and risk reduction behaviour among priority populations; improving access to HIV testing for those who need it; and encouraging and supporting people with HIV to start and maintain anti-retroviral treatment.

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

Creutzfeldt-Jakob disease(CJD)

CJD is a rare disease, with average of 1.13 cases per million population per year reported in Australia. CJD has been scheduled as a notifiable disease in all Australian States and Territories. In NSW, in the 12 months to end June 2015, eight confirmed cases of CJD (classic form) were reported to NSW Health- a rate of 1.1 cases per million.

CJD is a fatal neurological disorder thought to be caused by the accumulation of abnormal proteins known as prions. Prions are transmissible under certain rare circumstances. CJD is part of a group of diseases known as Transmissible Spongiform Encephalopathies (TSEs). CJD has two main forms - classical (which includes sporadic, familial and iatrogenic cases) and variant CJD.

Variant CJD was recognised in the UK in 1996 and is thought to be caused by consumption of beef infected with Bovine Spongiform Encephalopathy (BSE), which is an animal TSE.
Other human TSEs are Gerstmann-Sträussler-Scheinker disease (GSS), kuru and fatal familial insomnia (FFI), and for the purposes of disease notification are also classed as CJD.
No cases of variant CJD have been reported in Australia.

Infectious agent

The infectious agent is thought to be an abnormal form of the prion protein (PrP). Prion proteins have at least two forms - a normal, cellular version (PrP^{C}) and a disease causing version (PrP^{Sc}). Exposure to the PrP^{Sc} can cause PrP^{C} to become PrP^{Sc}.

Mode of transmission

Classical CJD can arise due to an inherited mutation in the PrP gene (familial CJD, GSS, FFI), or arise seemingly spontaneously without any recognised exposure to the tissue of another case (sporadic).

All forms of CJD can be transmitted from person-to person under certain rare circumstances.

CJD is transmitted by inoculation of the infectious agent (prions) from the infectious tissues of a case. In persons with classical CJD, the tissues considered to have 'high-infectivity' are the central nervous system (CNS) tissues (i.e. brain and spinal cord) and the eye (particularly the optic nerve and retina). Some tissues (kidney, liver, lung, lymph nodes/spleen, maxillofacial neurovascular tissue, placenta, CSF) are considered to have 'low-infectivity' on the basis of animal studies, but the results are not conclusive (CDHA, 2004; WHO 2003). Classical CJD is not thought to be transmissible via blood and blood products.

In contrast, in those with variant CJD there is evidence of significant levels of the infectious agent in other tissues such as lymphatic tissues (e.g. tonsils, spleen, lymph nodes), as well as the CNS and eye. There is evidence to suggest that variant CJD may be transmissible through blood and blood products.

Investigation of cases

In NSW possible, possible, probable and confirmed cases are notified to the local public health unit and the Australian National CJD Registry (ANCJDR). The ANCJDR follows up each case referred to the Registry, gathering detailed information and investigating potential causes.

Early involvement of the ANCJDR allows liaison with the clinical team to encourage appropriate investigations.

Further information can be obtained from: **ANCJDR**

Summary of notifiable conditions activity in NSW

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

		Weekly		Year to date			Full Year	
		This week	Last week	2015	2014	2013	2014	2013
Enteric Diseases	Cryptosporidiosis	13	10	628	271	952	429	1132
	Giardiasis	49	43	2072	1750	1373	2942	2242
	Hepatitis A	2	1	52	43	41	80	62
	Hepatitis E	1	0	6	22	12	38	16
	Rotavirus	6	1	181	238	224	714	508
	Salmonellosis	53	55	2664	2796	2228	4302	3483
	Shigellosis	4	3	92	135	68	210	136
Respiratory Diseases	Influenza	375	289	3602	2838	1376	20888	8403
	Legionellosis	4	1	59	42	59	72	109
	Tuberculosis	8	4	217	247	230	473	443
Sexually Transmissible Infections	Chlamydia	395	315	12278	13097	11868	22898	21089
	Gonorrhoea	97	116	2885	2744	2460	4876	4266
Vaccine Preventable Diseases	Adverse Event Following Immunisation	2	1	106	174	394	256	510
	Meningococcal Disease	1	0	23	18	16	37	48
	Pertussis	162	146	3975	1067	1314	3051	2379
	Pneumococcal Disease (Invasive)	11	7	215	241	256	512	490
Vector Borne Diseases	Barmah Forest	2	3	148	124	289	163	438
	Chikungunya	1	0	26	9	11	27	22
	Dengue	2	6	192	278	165	378	303
	Ross River	13	14	1356	352	351	677	512

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.

Back to top