Communicable Diseases Weekly Report

Week 15, 11 April to 17 April 2016

In summary, we report:

- Shigellosis – publication on antibiotic sensitivity of NSW *Shigella* isolates
- Hepatitis E – publication on an outbreak in NSW
- Human immunodeficiency virus (HIV) – 2015 annual report released
- 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.

Shigellosis

There were four notifications of shigellosis reported this week (Table 1). Two were acquired overseas and two were likely acquired locally from male to male sexual contact.

Shigellosis is a diarrhoeal disease caused by *Shigella* bacteria. Symptoms include diarrhoea (often containing blood and mucous), fever, nausea, vomiting and abdominal cramps. The symptoms usually begin around one to three days after exposure.

Shigella infection spreads easily from person to person by the faecal-oral route. Ingestion of only a small number of organisms is sufficient to result in infection. Shigellosis can be prevented by thorough hand washing after any possible exposures to human faecal material, including after toileting, changing nappies and sexual activity. People who have shigellosis should not have sex where there is any contact with the anus, to avoid transmitting *Shigella* bacteria to the mouth.

People with shigellosis should not go to work or school until their diarrhoea has stopped. Children in child care should be excluded until their diarrhoea has ceased for 24 hours. People who are food handlers, or care for patients, children or the elderly should not attend work until 48 hours after their symptoms have resolved.

A study recently published in the *Medical Journal of Australia* (MJA) (18 April 2016) examined all notified cases in NSW over a one year period from 1 May 2013 to 30 April 2014 and tested *Shigella* isolates from these cases for susceptibility to a range of antibiotics. In total, there were 160 notified cases of shigellosis during that period. Among the 160 *Shigella* isolates tested, 98% were susceptible to ceftriaxone, 87% to azithromycin, 73% to ampicillin, 65% to ciprofloxacin, and only 24% to co-trimoxazole. Ciprofloxacin resistance was more common in locally acquired than in overseas acquired infection. These findings reflect increasing antibiotic resistance in *Shigella* isolates reported in international studies.

The current Australian Therapeutic Guidelines recommend either co-trimoxazole or quinolone therapy (including ciprofloxacin) for suspected or proven shigellosis, but do comment that quinolone resistance is increasing in developing countries and recommend azithromycin as an alternative option, if required. Because of the low proportions of isolates sensitive to co-trimoxazole and to ciprofloxacin found in the MJA study, the study authors recommend the use of azithromycin, rather than ciprofloxacin or co-trimoxazole, as the first-line agent in suspected or proven shigellosis, regardless of place or method of acquisition. Ceftriaxone remains a suitable option for seriously unwell or hospitalised patients before the availability of susceptibility testing.

Follow the links to the study and for further information on shigellosis and *Shigella* notifications.

Hepatitis E

There was one new case of hepatitis E virus (HEV) infection notified this week (Table 1). The case likely acquired the virus during a trip to the Philippines and Thailand, and developed symptoms characteristic of the disease approximately one month after returning to Australia.

HEV infection usually occurs after consuming contaminated water or food. Most HEV infections occur without symptoms. When symptoms occur there is usually an acute illness with nausea, vomiting, tiredness, abdominal pain, fever, dark urine and jaundice (yellowing of the skin and eyes) that resolves without treatment. HEV infections in high-risk groups, infants, people with pre-existing liver disease and pregnant women, can lead to liver failure or other serious complications.

NSW Health actively follows-up all notified cases of HEV infection to determine their likely source of infection and prevent further infections. The majority of HEV infections notified in NSW are acquired during travel to developing countries. When visiting countries with poor sanitation, infection can be prevented by drinking only bottled or boiled water, avoiding untreated water or ice, only eating fresh fruit or vegetables that you peel yourself or food that is freshly cooked and piping hot, and taking care not to swallow water when swimming.

Sporadic HEV infections acquired in NSW are identified from time-to-time. Some pigs in Australia carry the virus, and most local infections are thought to occur by consuming undercooked pork or pork products (e.g. pâté or sausages made with pork liver). A recent article in the *Medical Journal of Australia* (18 April 2016) reports on the first known outbreak of HEV infection in NSW and Australia, which was attributed to undercooked pork products served at a restaurant. HEV outbreaks have been reported in other developed countries following consumption of raw or undercooked pork, deer meat and shellfish. These events demonstrate of the potential for HEV to cause foodborne outbreaks. Pork, including pork products, and other meats should always be thoroughly cooked before consumption to prevent HEV infection.

Follow the links to the article and to further information about hepatitis E and food safety measures to prevent infection at the NSW Health and NSW Food Authority websites.

Human immunodeficiency virus (HIV) in 2015

In 2015, 350 NSW residents were notified with newly diagnosed HIV infection; similar to the annual average in 2009-2014 (n=347) and 15% fewer than in 2012 (n=411) (Figure 1). Three hundred and twenty one (92%) cases were male, 28 (8%) were female and 1 (<1%) was transgender, similar to previous years. Six (<2%) cases were reported to be Aboriginal people, 338 (97%) were reported to be non-Aboriginal people and for 6 (<2%) Aboriginal status was not reported.

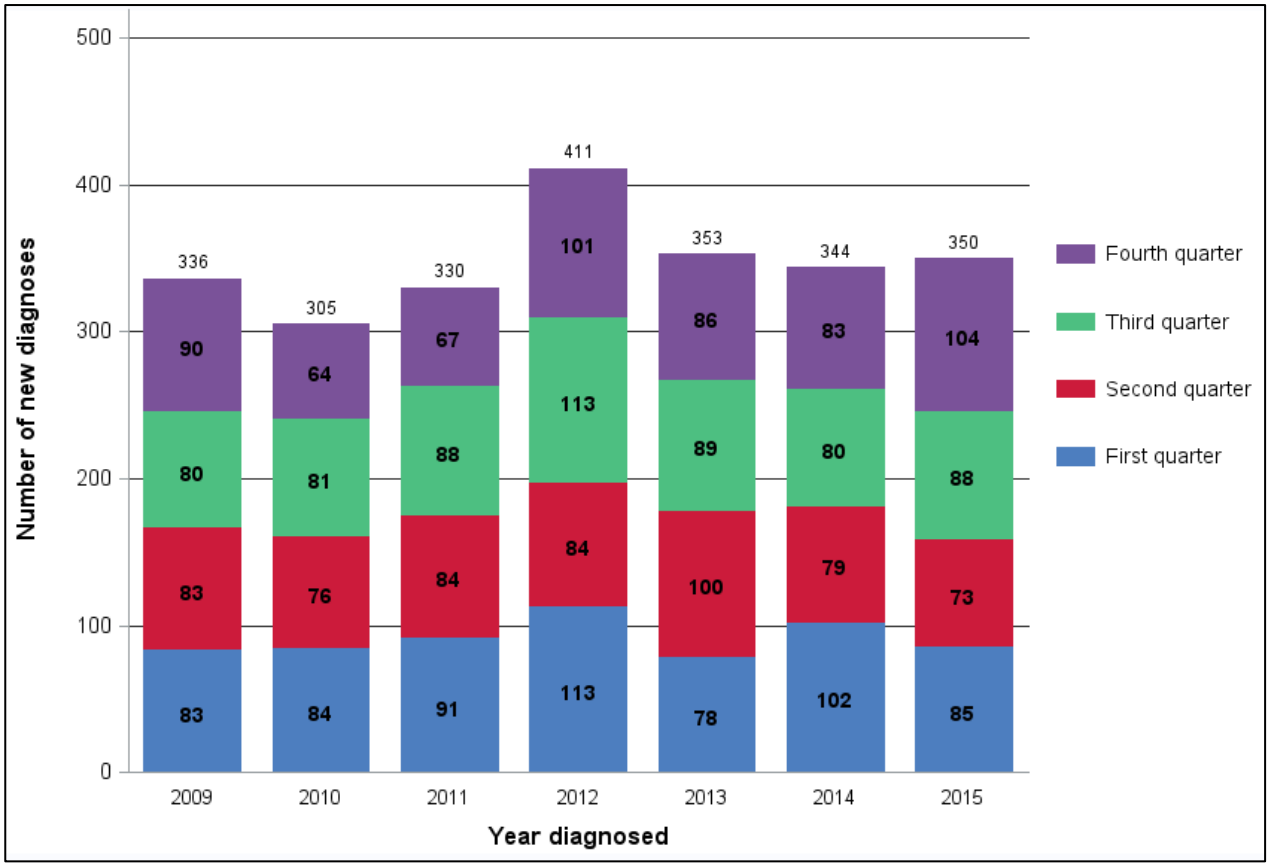
Of 350 NSW residents newly diagnosed in 2015, six (<2%) were less than 20 years of age, 110 (31%) were 20 to 29 years, 106 (30%) were 30 to 39 years, 59 (17%) were 40 to 49 years and 69 (20%) were 50 years or over.

HIV risk exposure was reported as male to male sex by 283 (81%) people newly diagnosed in 2015, heterosexual sex for 52 (15%), injecting drug use for 4 (1%) and another type or unknown exposure for 11 (3%). This was a similar breakdown of HIV risk exposures to that reported for people newly diagnosed in 2009-2014.

HIV infection manifests by reducing one of the white blood cells important for immunity – these are called CD4 cells. A low CD4 count generally indicates an advanced stage of HIV infection. In 2015, of the 350 NSW residents notified with newly diagnosed HIV infection, 39% (n=136) had a CD4 at diagnosis of less than 350 cells/μL, an indicator of late diagnosis, compared with 36% of the new diagnoses in 2009-2014 and 33% of those diagnosed in 2012.

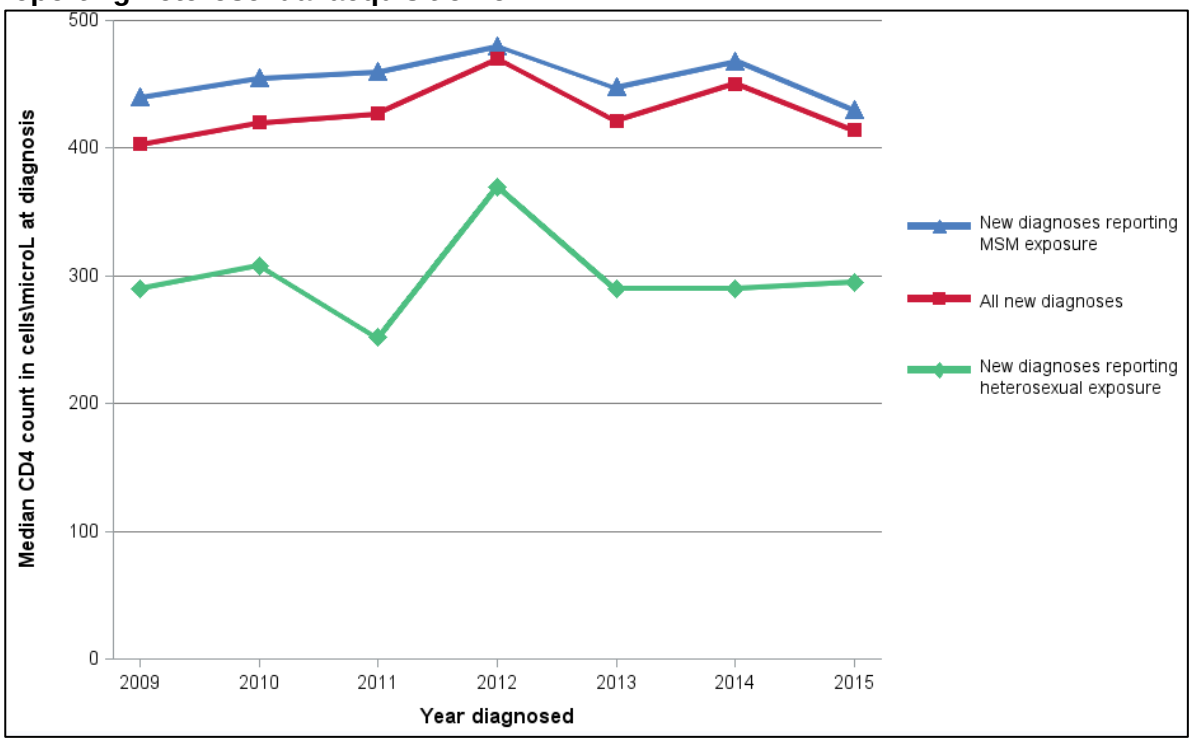
The median CD4 count at diagnosis for NSW residents notified with newly diagnosed HIV infection in 2015 was 414. For those reporting to be MSM it was 430 and for those reporting only heterosexual exposure to HIV it was 295. The median CD4 count at diagnosis among those reporting heterosexual exposure to HIV remains consistently low (Figure 2).

Figure 1: Number of NSW residents notified with newly diagnosed HIV infection from 2009 to 2015



Data source: Notifiable Conditions Information Management System, Health Protection NSW, extracted 11 February 2016

Figure 2: Median CD4 count at diagnosis of NSW residents notified with newly diagnosed HIV infection from 2009 to 2015 for all, for those reporting to be MSM and for those reporting heterosexual acquisition of HIV

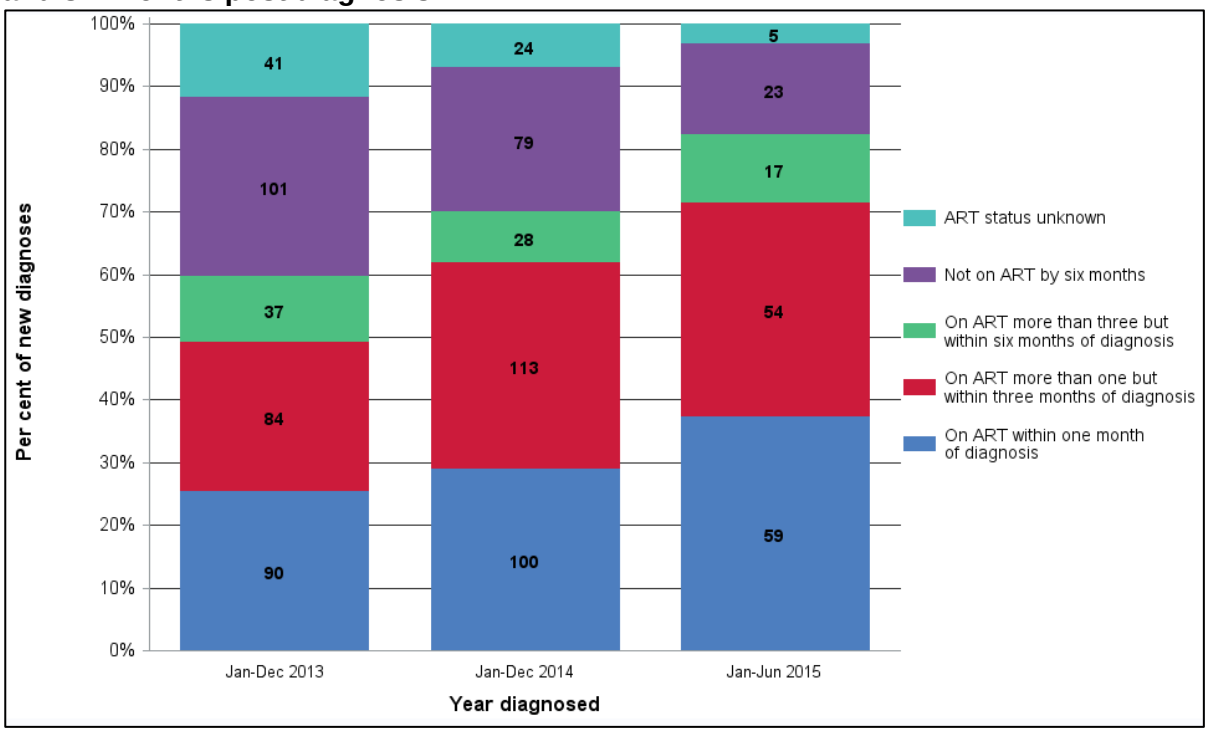


Data source: Notifiable Conditions Information Management System, Health Protection NSW, extracted 11 February 2016.

Since 2013, HIV surveillance in NSW was enhanced to collect information on the patient's retention in care, antiretroviral therapy (ART) commencement, latest HIV viral load and CD4 count six months after diagnosis. Return rate of six month post diagnosis follow up forms from treating clinicians was high with forms returned for 803 of 855 (94%) of people newly diagnosed with HIV infection between 1 January 2013 and 30 June 2015.

Of the 855 NSW residents newly diagnosed with HIV infection from 1 January 2013 to 30 June 2015, 582 (68%) were reported to have commenced ART within six months of diagnosis. This comprises 211 (60%) of the 353 new diagnoses in 2013, 241 (70%) of the 344 new diagnoses in 2014 and 130 (82%) of the 158 new diagnoses from 1 January 2015 to 30 June 2015. Of the new diagnoses in 2013, 25% had commenced ART within one month of diagnosis, which increased to 29% among the 2014 new diagnoses and to 37% of those newly diagnosed in January to June 2015 (Figure 3).

Figure 3: Per cent of 855 NSW residents newly diagnosed with HIV infection 2013 (n=353), 2014 (n=344) and January to June 2015 (n=158) by ART commencement status at one, three and six months post diagnosis



Data source: Notifiable Conditions Information Management System, Health Protection NSW, extracted 11 February 2016

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 shown that ART initiated as soon as possible 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.

When first infected with HIV, most people have either no symptoms or only mild symptoms. 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 particularly high in the period shortly after initial infection when the virus is replicating but before an immune response occurs, as well as in late stage disease.

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.

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, sexual partners of people from high prevalence countries, and people who inject drugs.

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.

The NSW HIV Strategy 2016-2020 continues the commitment to achieving the virtual elimination of HIV transmission in NSW by 2020, building on the targets and activities that proved successful in implementing the NSW HIV Strategy 2012-2015.

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

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 April 2016 to 17April 2016, by date received

		Weekly		Year to date			Full Year	
		This week	Last week	2016	2015	2014	2015	2014
Enteric Diseases	Cryptosporidiosis	38	60	461	405	171	1038	429
	Giardiasis	86	95	1343	1213	1001	3415	2942
	Hepatitis A	1	2	18	41	32	71	80
	Hepatitis E	1	0	9	4	7	20	38
	Listeriosis	1	1	16	8	9	26	23
	Rotavirus	8	11	168	113	107	1036	714
	Salmonellosis	77	109	1873	1716	1731	4045	4275
	Shigellosis	4	4	87	57	99	172	212
Respiratory Diseases	Influenza	221	193	2062	1187	886	30301	20888
	Legionellosis	5	4	38	27	24	96	72
	Tuberculosis	9	5	138	103	125	441	475
Sexually Transmissible Infections	Chlamydia	514	580	7646	6654	7039	22549	22900
	Gonorrhoea	103	131	1672	1561	1427	5401	4878
Vaccine Preventable Diseases	Adverse Event Following Immunisation	6	1	51	55	112	182	256
	Measles	1	3	9	4	51	9	68
	Mumps	1	0	6	16	35	63	82
	Pertussis	153	194	3972	1798	593	12077	3052
	Pneumococcal Disease (Invasive)	5	13	87	77	77	494	511
Vector Borne Diseases	Barmah Forest	2	0	11	81	67	185	163
	Chikungunya	1	0	7	19	5	37	27
	Dengue	11	17	153	131	147	340	378
	Flavivirus - other & unspecified	1	0	8	0	1	1	5
	Malaria	1	0	11	14	29	47	87
	Ross River	20	25	259	927	141	1640	673
Zoonotic Diseases	Q fever	2	3	65	65	64	267	190

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.