Communicable Diseases Weekly Report

Epi-Week 21: 19 May 2014 – 25 May 2014

In summary, we report:

- **STEC** – two new cases reported
- **Polio** – global alert
- **HIV** – quarterly report (Q1 - 2014)
- **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.

STEC/HUS

Two siblings with Shiga toxin-producing *Escherichia coli* (STEC) infection were reported this week from South Eastern Sydney Local Health District. Both are children aged under 5 years. The younger sibling also developed haemolytic uraemic syndrome (HUS). The children's exposures being investigated include staying at a cattle farm as well as attendance at a child care centre. The strain of STEC is yet to be confirmed by the laboratory.

Escherichia coli (E.coli) bacteria are commonly found in the gastrointestinal tract of people and animals. Many types of E.coli are harmless, but some can produce toxins, called Shiga toxins or verocytotoxins, which can result in severe disease in humans.

STEC infection causes a diarrhoeal illness, often with abdominal cramps, nausea and vomiting. The Shiga toxin causes bleeding in the gut, so people with STEC gastroenteritis often have diarrhoea containing blood. The most severe illness caused by STEC is haemolytic uraemic syndrome (HUS). HUS consists of acute kidney failure and a type of anaemia where the red blood cells break up. The O157:H7 strain of STEC has the strongest association with HUS, although infection with other strains can also result in HUS. Children are more likely to develop HUS than adults.

Cattle are the most important source of STEC; however other animals and humans can transmit the bacteria and cause human illness. The infection is spread mainly from eating contaminated food and from direct contact with animals. Person to person spread also occurs, particularly within families and childcare centres.

STEC infection is prevented by safe food handling and good hand hygiene. Ready to eat foods should not be allowed to come into contact with raw meat and equipment used to prepare raw meat such as knives and cutting boards should be thoroughly washed immediately after use. Foods made from minced meat, such as hamburger patties and sausages should be cooked thoroughly and not eaten if there is any pink meat inside. Fruit and vegetables should be washed before eating and unpasteurised dairy products should not be consumed. Hands should be washed before eating and preparing food, after touching pets and farm animals, and after using the toilet or changing nappies.

Follow the link for STEC/VTEC notification data

Follow the link for further information STEC/HUS factsheet

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Polio

On Monday 5 May 2014, the WHO Director General (DG) declared the recent international spread of wild poliovirus a "public health emergency of international concern" and issued Temporary Recommendations under the International Health Regulations (IHR) 2005. The Temporary Recommendations apply to travellers from the 10 countries deemed to have active transmission of poliovirus including: Pakistan, Cameroon, Syrian Arab Republic (Syria), Afghanistan, Equatorial Guinea, Ethiopia, Iraq, Israel, Somalia and Nigeria and will be reviewed in 3 months. These requirements will affect Australians who visit the countries outlined for a period greater than 4 weeks.

In response to these Temporary Recommendations the Department of Health has recommended that Australians travelling to any of these countries are up to date with routinely recommended vaccinations against polio, including a booster, and have documented evidence of this prior to departure. Documented evidence should include a completed World Health Organization International Certificate of Vaccination or Prophylaxis which are available at some travel clinics or otherwise can be ordered from the WHO (link below).

Australian travellers are being advised to consult with their doctor regarding their vaccination requirements. As a result there may be an increase in the number of people seeking advice regarding polio vaccination related to this WHO announcement. Please refer to the Australian Immunisation Handbook 10th Edition website for information on polio vaccine administration.

Children - In NSW, Inactivated poliomyelitis vaccine (IPV), is administered in a combination vaccine as Infanrix Hexa® and is recommended for infants at 2 months (can be given as early as 6 weeks), 4 and 6 months of age. If the 1st dose of an IPV-containing vaccine is given at 6 weeks of age, the next scheduled doses should still be given at 4 months and 6 months of age. A booster dose of IPV-containing vaccine (Infanrix-IPV®) is recommended at 4 years of age. In circumstances where only IPV is required for catch-up vaccination of children, contact your local Public Health Unit on 1300 066 055 to order IPOL® vaccine.

Adults - A course of 3 doses of IPV-containing vaccines is required for the primary vaccination of adults. No adult should remain unvaccinated against poliomyelitis. For adults exposed to a continuing risk of infection, e.g. travellers to polio affected areas, booster doses are desirable every 10 years.

Follow the link to more information on the WHO polio alert:

Follow the link to the WHO International Certificates of Vaccination

Follow the link to The Australian Immunisation Handbook (10th edition)

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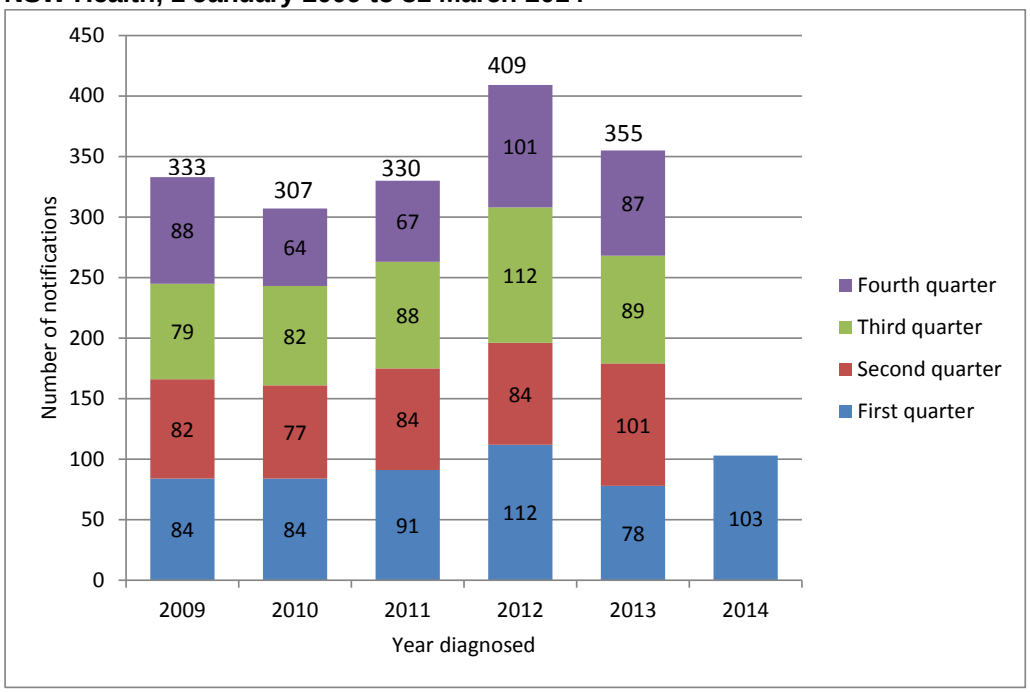
Human immunodeficiency virus (HIV)

There were 103 notifications of newly diagnosed human immunodeficiency virus (HIV) infection in NSW in the first quarter of 2014, a 32% increase compared to the number of notifications in the first quarter of 2013 and an 8% decrease compared to the same period in 2012 (Figure 1).

Of these 103 notifications, 87 (84%) were in men who have sex with men, compared to 79% and 82% for the same period in 2013 and 2012 respectively. There were nine (9%) notifications with a heterosexual risk exposure.

One hundred and one (98%) notifications of newly diagnosed HIV infection were male, with only two female NSW residents notified between 1 January 2014 and 30 March 2014.

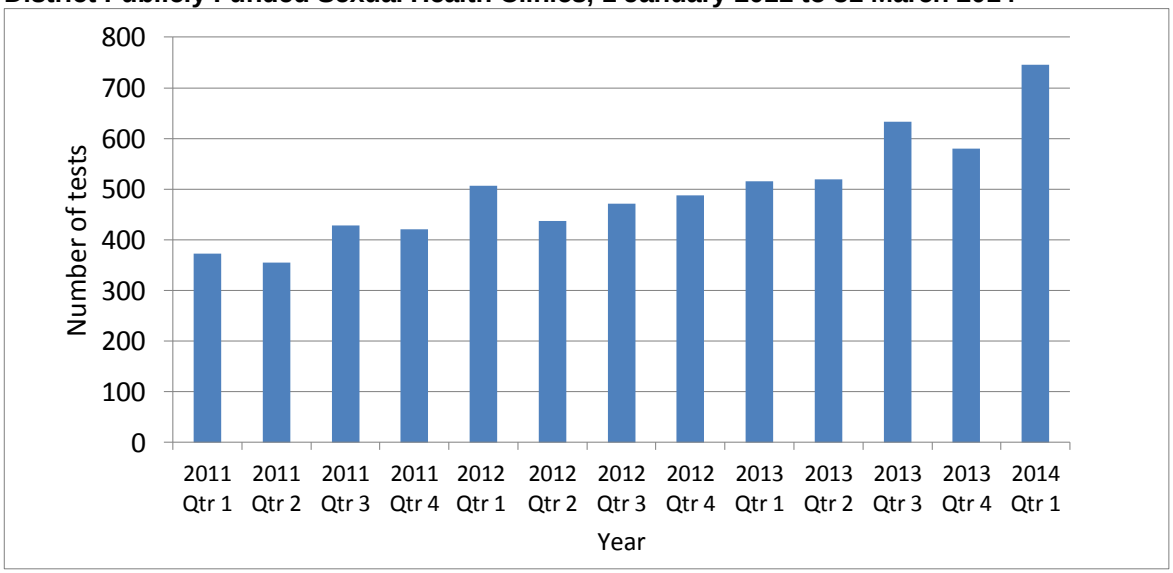
Figure 1: Number of NSW residents newly diagnosed with HIV infection per quarter and notified to NSW Health, 1 January 2009 to 31 March 2014



Date source: NSW HIV/AIDS database, Health Protection NSW, extracted 7 May 2014

In the first quarter of 2014, there were 120,658 HIV serology tests performed in 15 laboratories throughout NSW. This is an increase of 7% compared to the first quarter of 2013 and an increase of 9% compared to the first quarter of 2012. Importantly, data from publicly funded sexual health clinics indicates testing has increased in high risk populations (Figure 2). Testing increased particularly in key inner Sydney city areas, continuing trends from previous quarters.

Figure 2: Number of HIV tests performed in men who have sex with men (MSM) in five Local Health District Publicly Funded Sexual Health Clinics, 1 January 2011 to 31 March 2014



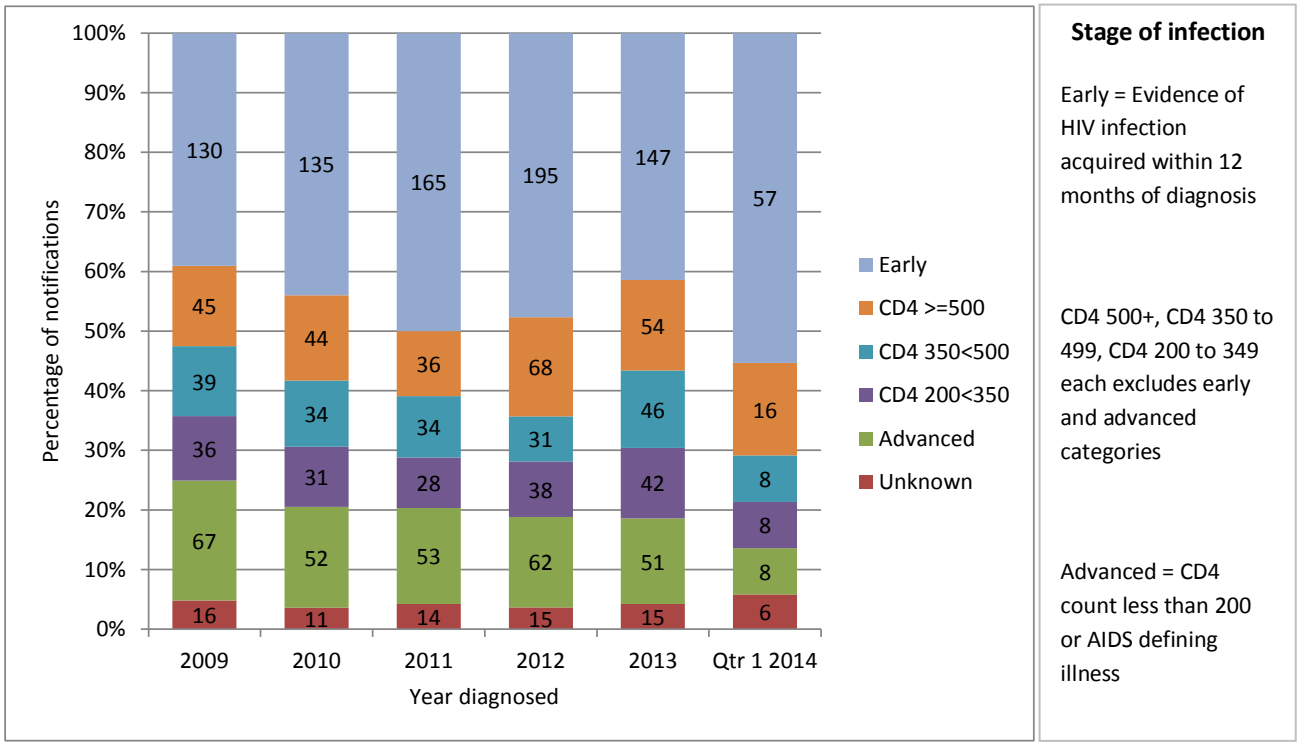
Data source: PFSHCs in Western Sydney, North Sydney, Nepean Blue Mountains, Northern NSW and Illawarra Shoalhaven LHDs

Fifty seven of 103 (55%) NSW residents newly diagnosed with HIV infection presented with evidence of early stage infection, which was a higher proportion compared with the first quarters and full years of the previous five years 2009 to 2013 (Figure 3).

The higher proportion of cases in early stage infection, combined with the data showing increased testing, suggests that the increase in new diagnoses in quarter 1 2014 reflects earlier diagnoses in

newly acquired cases rather than an increase in incidence. However, more data in the coming quarters is needed to determine if there is any true trend change over time.

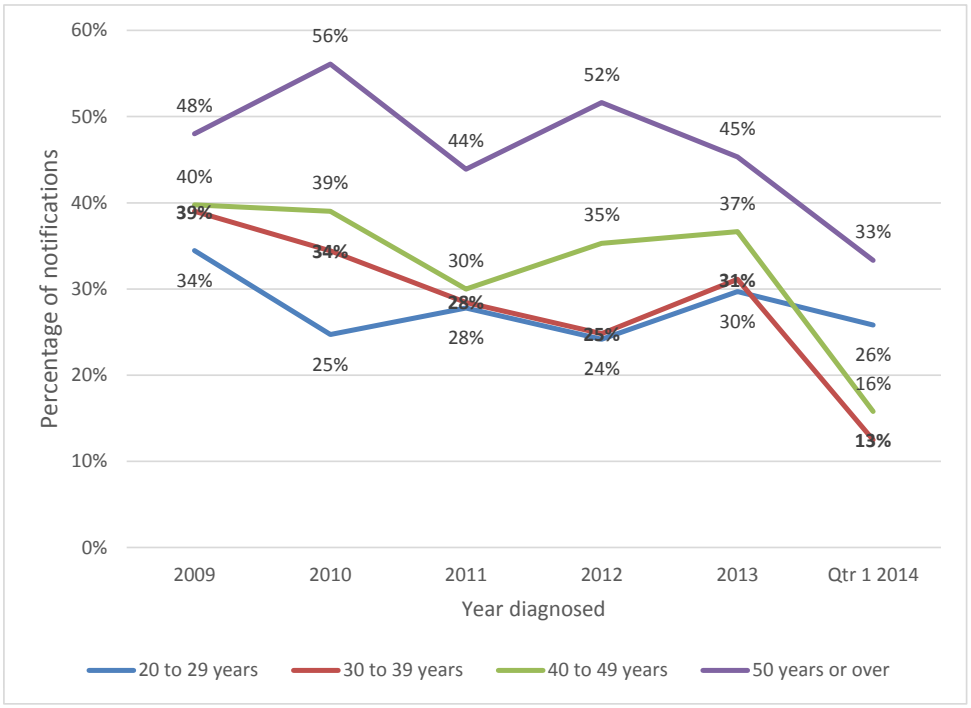
Figure 3: Number and percentage of HIV notifications by stage of infection at diagnosis[1], 1 January 2009 to 31 March 2014



Date source: NSW HIV/AIDS database, Health Protection NSW, extracted 7 May 2014
[1]Evidence of early stage infection was defined as notification of a sero-conversion illness or negative or indeterminate HIV test within 12 months of diagnosis, irrespective of CD4 or presentation with an AIDS defining illness at diagnosis

Figure 4, which shows the percentage of notifications with evidence of late diagnosis, shows that the trend to earlier diagnosis in quarter 1 2014 has occurred in all age groups.

Figure 4: Percentage of HIV notifications with clinical or immunological evidence of late diagnosis[1] by age group, 1 January 2009 to 31 March 2014



[1]Clinical or immunological evidence of a late diagnosis included a CD4 count less than 350 or an AIDS defining illness within three months of diagnosis, in the absence of evidence of a laboratory confirmed negative or indeterminate HIV test

in the 12 months prior to diagnosis. Please note: this definition of "late" has changed and tightened since the 2013 fourth quarter and annual report.

The *NSW HIV Strategy 2012-2-15 A New Era* was launched on 1 December 2012. 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 goal of the strategy is to work towards the virtual elimination of HIV transmission by 2020. The Strategy sets ambitious targets that include the reduction in transmission of HIV among gay and other homosexually active men by 60% by 2015 and by 80% by 2020. To achieve these targets, efforts will focus on:

- promoting condom use, safe injecting and risk reduction behaviours among priority populations;
- improving access to HIV testing for those who need it; and
- encouraging and supporting people with HIV to start and maintain antiretroviral treatment.

HIV is a retrovirus that 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.

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. Making an early diagnosis is critical for reducing HIV transmission.

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, 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.

Follow the links for more information on HIV and on HIV notifications and other HIV data.

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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 19 May to 25 May 2014, by date received.*

		Weekly		Year to date			Full Year	
		This week	Last week	2014	2013	2012	2013	2012
Enteric Diseases	Cryptosporidiosis	8	12	224	860	400	1131	655
	Giardiasis	66	58	1344	1126	1077	2240	2012
	Haemolytic Uremic Syndrome	1	0	5	6	2	9	8
	Listeriosis	1	2	12	21	17	33	36
	Rotavirus	9	8	145	182	285	508	1759
	Salmonellosis	85	117	2268	1897	1527	3485	2942
	Typhoid	2	1	22	36	25	58	43
Respiratory Diseases	Influenza	43	44	1135	711	558	8401	8037
	Tuberculosis	3	7	153	176	191	439	469
Sexually Transmissible Infections	Chlamydia	456	476	9651	9225	9593	21080	21263
	Gonorrhoea	70	90	1960	1900	1716	4268	4115
Vaccine Preventable Diseases	Adverse Event Following Immunisation	3	7	130	350	151	509	269
	Mumps	2	1	42	44	53	88	110
	Pertussis	34	23	715	1074	3230	2378	5998
	Pneumococcal Disease (Invasive)	9	11	119	174	160	489	564
Vector Borne Diseases	Dengue	5	5	187	116	153	300	287
	Malaria	5	3	42	41	25	93	68
	Ross River	13	24	248	278	400	513	596

* **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.

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