

TROPICAL PUBLIC health news.

Tropical Public Health Services (Cairns)

Introduction

In this issue we take a look at influenza, dengue fever and Zika, rheumatic heart disease and syphilis.

Health care costs and expenditure are a key media concern across Australia and rightly so. In 2015, the federal budget allocated \$69.38 billion or 16% of the total federal budget to health. Nearly half of that money was for Medicare services. Pharmaceuticals benefits and assistance to the states for public hospitals accounted for most of the other half. What remained of the health budget went to other hospital and health services, administration and Aboriginal and Torres Strait Islander Health¹ as well as important federal government projects carried out by Tropical Public Health Services (Cairns) and other public health units across the country.

On May 3, the government announced the 2016/17 budget which directly impacts on four key services areas provided by Tropical Public Health Services (Cairns) (TPHS). It is important to note these services are often carried out in collaboration with other agencies and so TPHS does not necessarily receive the total amount of money allocated by the government. The government committed \$3.0

million over three years to continue funding for exotic mosquito control in the Torres Strait, with a focus on preventing the establishment of the Asian tiger mosquito in transport hubs, particularly Horn and Thursday Islands². The ability of TPHS to continue this work is critical, as you will read later in this newsletter. The Torres Strait had its first outbreak of dengue fever in over a decade in 2016 and for the first time in Australian history, a dengue fever outbreak was determined to be caused by the Asian tiger mosquito.



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The federal funding also continues to support cross border liaison services to ensure effective two-way communication with Papua New Guinea regarding communicable diseases and other health related issues. The Torres Strait communications officer based in Cairns with TPHS, travels frequently to the Torres Strait liaising with cross border stakeholders. This work is important in relation to the treatment of PNG nationals in Queensland Health facilities for diseases such as tuberculosis.

The national partnership agreement on rheumatic fever strategy will see the project agreements with the Northern Territory, Queensland, Western Australia and South Australia extended for a further 12 months. The Rheumatic Heart Disease Register and Control Program, run by the project team at THPS, maintains the state-wide patient recall and reminder system. The register is accessed by health care staff who are treating clients with either acute rheumatic fever or rheumatic heart disease throughout Queensland.

Lastly, THPS's sexual health team will get additional funds allowing them to continue to combat the ongoing outbreak of syphilis in North Queensland. The federal government will provide \$4.5million over four years to the Queensland government to combat sexually transmitted and blood borne infections across the North Queensland.

*Dr Richard Gair, Director
Tropical Public Health Services
(Cairns)*

1. <http://www.abc.net.au/news/2015-05-12/budget-2015-sliced-diced-interactive/6460102#spending/breakdown/2017/public-order-and-safety>

2. http://www.budget.gov.au/2016-17/content/bp2/download/BP2_consolidated.pdf



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DENGUE returns to the Torres Strait

In March 2016, for the first time since 2004, the Torres Strait Islands experienced a dengue outbreak.

There was a total of 18 confirmed cases on Erub (Darnley) Island and one case on Badu Island within a month. The outbreak was successfully controlled through the timely and effective response of the DART team from TPHS (Cairns) with support from Torres and Cape Hospital and Health Service, Torres Strait Island Regional Council and Torres Strait Regional Authority.

This outbreak was the first in Australia in which the Asian tiger mosquito *Aedes albopictus* was identified as being the primary vector responsible for virus transmission. The common vector of dengue in north Queensland is *Aedes aegypti*, but this species was not detected on Erub or Badu Island during the outbreak, while relatively dense populations of *Ae. albopictus* were present. The virus in circulation was identified as Dengue type 2, the same serotype that has been responsible for hundreds of cases in PNG this wet season.

This was the first dengue outbreak in Australia in which harbourage spraying was conducted as the main strategy for vector control. The strategy involves the application of residual pyrethroid insecticide to selected portions of vegetation

in the back-yard and on the fringes of the community where the Asian tiger mosquito preferentially rests. The team also conducted yard to yard treatment or removal of water-holding containers. A public awareness campaign emphasizing personal protection from mosquito bites was also implemented. Disease transmission stopped immediately after the intervention.

Senior Medical Entomologist Dr Odwell Muzari was thrilled with the result of the intervention, "In recent years we have been trialling and evaluating harbourage spraying as a unique method for the suppression of *Ae. albopictus*, and it is exciting to see that the strategy can be so effective at ending dengue transmission where the Asian tiger mosquito is involved".



DART Vector Control Officers Rod Bellwood, Vivian Lawler and Bruce Crunkhorn with TSIRC Environmental Health Workers Normea See Kee and Zitha Mosby spraying *Ae. albopictus* habitats on Erub Island during the dengue outbreak

Aedes albopictus was first recognised in Australia in 2005 when established populations were discovered on some of the Torres Strait islands. The Commonwealth Government funds a vector suppression program through TPHS Cairns mainly focused on Thursday Island and Horn Island.

Dengue update

There have been 64 imported cases of Dengue fever into the Cairns region this year, a 65% increase from last year.

Each imported case has the potential to cause an outbreak. Worryingly, in the last month there have been 12 imported cases of Dengue fever which have not been notified to Tropical Public Health Services (Cairns). Dengue fever is a notifiable condition on clinical suspicion under the *Public Health Act (2005)*. It is an offence not to notify under the *Public Health Act (2005)* and a maximum penalty of \$1500 may apply.

- Dengue has an average incubation period of 4-5 days (can be up to 12 days)
- Dengue often presents as a non-specific viral illness, but the more typical Dengue symptoms/signs are: high fever; lethargy; headache, taste aberrations, muscle, bone and joint pain; anorexia and in some cases a rash
- A full blood count may show leukopenia and/or thrombocytopenia
- It is important to enquire about recent travel.

If considering testing for Dengue, ask about the onset date of symptoms:

- First 5 days of illness: request Dengue PCR + Dengue NS1
- First 9 days of illness: request NS1
- Onset more than 5 days ago: request Dengue serology

There are currently large, sustained outbreaks of Dengue fever in Papua New Guinea and Bali.

There has been recent confirmation of locally acquired Zika in PNG and Pacific Island nations. Zika is spread by the same mosquitoes as dengue, which increases the risk of Zika outbreaks occurring in the receptive areas of North Queensland. If this occurs, it will have far reaching effects on our population with pregnant women and their unborn babies particularly at risk. For more information, see the article on Zika in this newsletter.

Medical practices should notify suspected cases of dengue fever or Zika immediately to the Tropical Public Health Services (Cairns) phone (4226 5555) or fax (4031 1440). Do not wait for test results before notifying TPHS.

RHD

Members of the Rheumatic Heart Disease Register and Control Program team were among the 154 healthcare professionals from across Australia who attended the Queensland Health Care Workers Acute Rheumatic Fever and Rheumatic Heart Disease work shop entitled, 'Think ARF...Stop RHD...' earlier this year.

The two day event was designed in conjunction with partners RHD Australia Queensland, the Queensland Government, the Heart Foundation, AMOSS, Menzies School of Health Research and RHD Australia.

In addition to providing an overview of acute rheumatic fever (ARF) and rheumatic heart disease (RHD), ARF/RHD diagnosis and management information, and an understanding of the spectrum of

the disease using a public health framework, the event focused on utilising the attendees' geographical and clinical knowledge to continue with the development of RHD Australia Queensland's current road map for the Queensland ARF/RHD program.

The Rheumatic Heart Disease Register and Control Program, based in Cairns, maintains the state-wide patient recall and reminder system. The register is accessed by health care staff who are treating clients with either acute rheumatic fever or rheumatic heart disease throughout Queensland.



(L-R) Claire Boardman, Deputy Director RHD Australia, Hon. Cameron Dick, Minister for Health and Minister for Ambulance Services, Mellise Anderson, Manager, Rheumatic Heart Disease Register and Control Program (Queensland), Catherine Halkon, Project Manager RHD Australia, Dr Sonya Bennett, Executive Director, Communicable Diseases Branch, Department of Health

Syphilis – the outbreak continues.....

The syphilis outbreak declared in the Cairns and Hinterland HHS area in September 2015 is ongoing, with the number of notifications continuing to rise; 134 people have been affected over the last 14 months compared to 34 for the whole of 2014. Syphilis outbreaks are occurring across Northern Australia with almost 800 people diagnosed as of the end of 2015.

Of particular concern, there have been four cases of congenital syphilis associated with the North Queensland outbreaks since 2011. Syphilis also increases the risk of HIV transmission.

Most cases in the Cairns and Hinterland HHS have been diagnosed in Aboriginal and/or Torres Strait Islander people aged 15- 40 years. Travel between communities and to Cairns is likely to increase during the drier months,

increasing the risk of people acquiring syphilis. Gay men and men who have sex with men are also at risk.

Cairns Sexual Health Service has recently circulated an alert to clinicians to highlight an increase in HIV diagnoses amongst Aboriginal and Torres Strait Islander gay men and men who have sex with men in the Cairns and Hinterland area. Most of the new cases were also diagnosed with syphilis.

- **All clinicians, please continue to offer sexually transmitted infection (STI) testing**, including for syphilis and HIV, to all young people, especially Aboriginal and/or Torres Strait Islander people aged 15-40 years and gay men and men who have sex with men.
- **Test all pregnant women for syphilis and HIV** at first presentation. Pregnant women at increased risk for syphilis, including Aboriginal and/or Torres Strait Islander women should have repeat syphilis testing at 28 weeks and at 34-36

weeks gestation. All women who have had syphilis treated during the pregnancy and/or limited antenatal care should be tested for syphilis at delivery.

- Ensure all clients who test positive for chlamydia or gonorrhoea are tested for syphilis and HIV, (if not already tested).
- Test all gay men and men who have sex with men as per the Sexually Transmitted Infections in Gay Men Action Group (STIGMA) guidelines http://stipu.nsw.gov.au/wp-content/uploads/STIGMA_Testing_Guidelines_Final_v5.pdf
- Consider ways to make your service accessible for all clients
- Prompt treatment and contact tracing are critical to STI control.

If you have any questions about syphilis or HIV please contact Cairns Sexual Health Service 4226 4769 or The Syphilis Surveillance Service 1800 032 238 Service 1800 032 238

Zika virus update

Tropical Public Health Service TPHS (Cairns) has begun Zika prevention work in Far North Queensland. The Dengue Action Response Team (DART) is focusing vector control activities targeting the dengue mosquito (which is also the mosquito which spreads Zika) on local dengue hot spots and places where pregnant woman are likely to visit.

On June 14, TPHS hosted a GP practice education session with 40 Cairns-based practitioners attending. Dr Richard Gair, Director TPHS and Dr Phillipa Cuttance, Staff Specialist – Obstetrics and Gynaecology, Cairns Hospital, presented on Zika and pregnancy including testing guidelines for Far North Queensland. Participants

received a pack with “GP Care at Home” sheets, a copy of the women and pregnancy brochure and the testing guidelines. Copies of these packs are available through THPS by calling 4226 6555.

The virus

Zika virus is closely related to the dengue virus. It can cause a short illness similar to dengue fever, but milder. Approximately 80% of people infected with Zika are asymptomatic. The most common symptoms are conjunctivitis, arthralgia and a maculopapular rash; fever, headaches, myalgia and fatigue may also be experienced. There is evidence of maternal fetal transmission of Zika virus and this has been linked with miscarriages and birth defects including microcephaly. Zika virus has also been linked with Guillain-Barré syndrome. The incubation period for Zika is considered to be 3-5 days

but may be up to 12 days. There is no medication for Zika, nor is there a vaccine. Whilst Zika is a mild illness it is important to prevent infection of pregnant women to protect the unborn baby.

Transmission

Transmission occurs primarily via mosquito vectors (the same ones that transmit dengue); however, it may also be transmitted by sexual contact and blood transfusion. *Aedes aegypti* mosquitoes are common in northern Queensland towns. They breed in anything that holds water around houses and have a flying range of up to 200 metres. *Aedes aegypti* bite mainly during the day. In Australia, *Aedes albopictus* (Asian tiger mosquito) is confined to the islands of the Torres Strait. See https://www.health.qld.gov.au/cairns_hinterland/docs/tph-news-4.pdf for more information about this mosquito.

Sexual transmission

It is possible for Zika virus to be transmitted to sexual partners. Current recommendations are:

- Men who have travelled to an area with ongoing Zika virus transmission, whose partner is pregnant should abstain from sexual activity (vaginal, anal, or oral) or consistently use condoms for the duration of the pregnancy.
- People who have had a confirmed Zika virus infection, whose partner is not pregnant

should abstain from sexual activity (vaginal, anal, or oral) or consistently use condoms for 6 months.

Testing in North Queensland

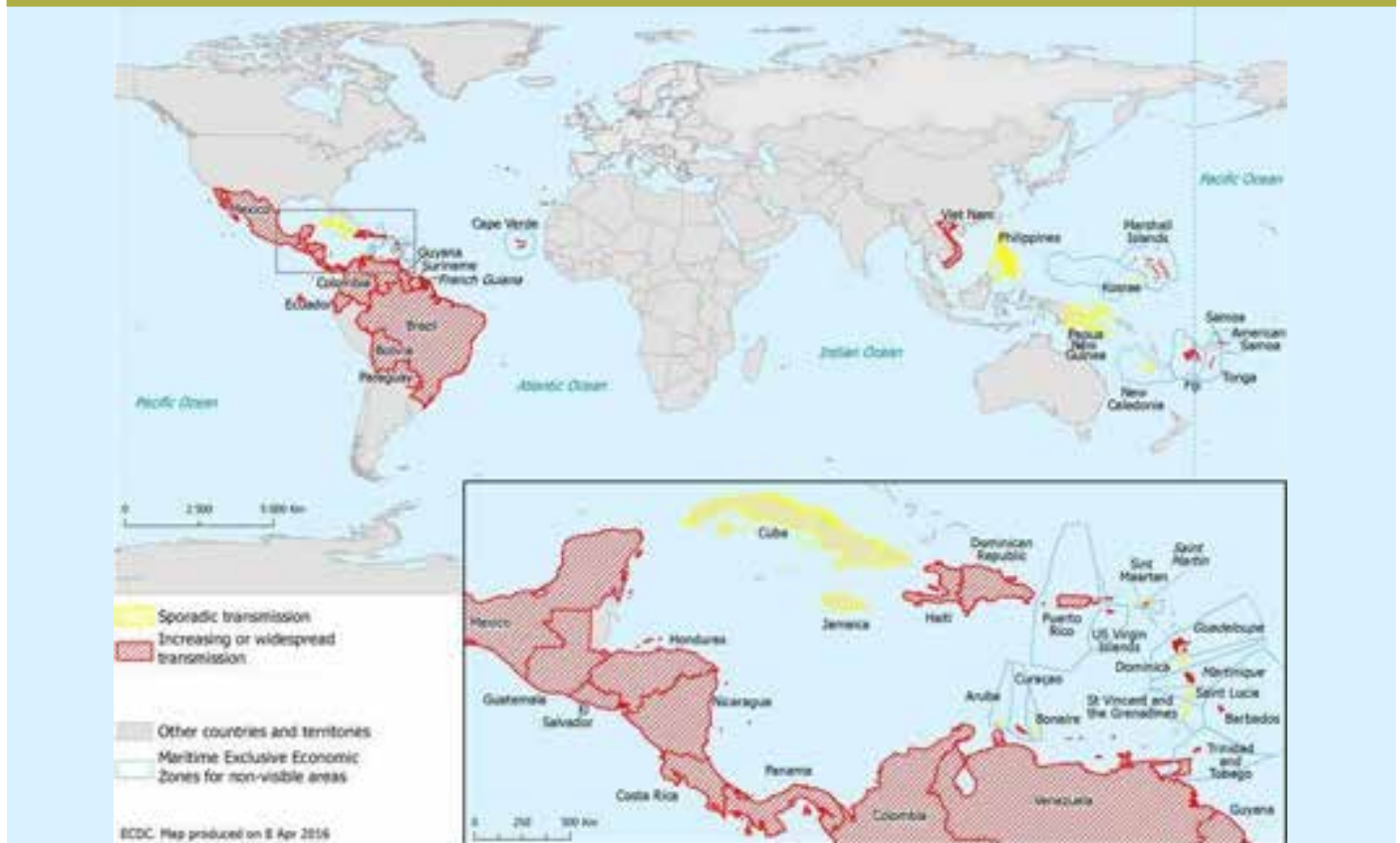
All requests for Dengue PCR or Dengue serology will have Zika PCR or Zika serology added to them. If Zika is suspected, order Zika PCR on blood if the onset is less than a week previously. Consider Zika PCR on urine if onset <14 days. If more than 5 days since onset of illness, order Zika IgG/IgM and repeat in 2-4 weeks. For pregnant women returning from an area with known

Zika transmission, testing guidelines are here: <http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-zika-pregnant.htm>

Risk to pregnant women

The primary aim of Zika control activities is to protect pregnant women from infection. Women with a history of travel during pregnancy to an area with ongoing Zika virus infection; should be considered for testing. Further details can be found here: <https://www.ranzcog.edu.au/womens-health/college-communicues/1668-zika-virus.html>

Countries with reported confirmed vector-borne transmission of Zika



Travel

- See <http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-zika-countries.htm> for the latest updates about countries reporting Zika transmission. Pregnant women should delay or avoid travel to these countries and consider delaying travel to other countries with endemic dengue transmission.

Risk of local acquisition of Zika virus

Given the distribution of *Aedes* mosquitoes in our region, there is a risk of local acquisition of Zika virus.

If there is clinical suspicion of Zika virus, please call Tropical Public Health Services on 4266 5555.

Prevention

Prevention of mosquito bites is the best way to protect against Zika virus. This is particularly important for pregnant women. Prevention means eliminating breeding sites, using flyscreens on the house, wearing insect repellent and using surface spray in the house. A video of how to apply surface spray is here: www.health.qld.gov.au/zika

Influenza

This year, there have been several respiratory virus outbreaks in Residential Aged Care Facilities (RACF) in Cairns and the Atherton Tablelands. In tropical and subtropical regions, including Northern Australia, influenza viruses circulate year round with peaks in early autumn and late winter. Sometimes, the first peak may occur before the influenza vaccine is available for the current year.

Influenza is transmitted very easily from person to person and although hygiene measures can play some part in controlling flu, the fact that it spreads so easily means that the only effective prevention strategy is vaccination.

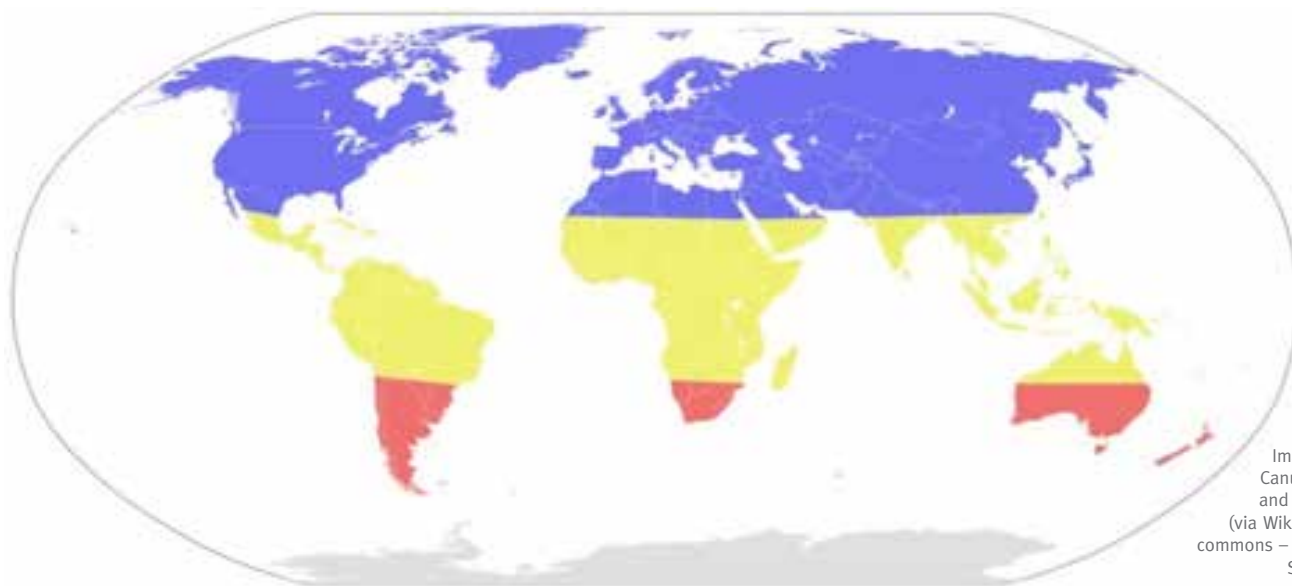


Image by Canuckguy and others (via Wikimedia commons – CC-BY-SA-3.0)

Seasonal risk:
Blue and Red: winter transmission. Yellow – year round transmission

Vaccination

The 2016 influenza vaccine for the National Immunisation Program (NIP) is a quadrivalent vaccine which contains:

- an A/California/7/2009 (H1N1) pdm09-like virus
- an A/Hong Kong/4801/2014 (H3N2)-like virus
- a B/Brisbane/6062008-like virus
- a B/Phuket/3073/2013-like virus

The Australian Technical Advisory Group on Immunisation (ATAGI) recommends annual influenza vaccination for any person ≥ 6 months of age. There are a number of groups which are at increased risk of influenza or its complications for which annual influenza vaccination is strongly recommended and should be actively promoted.

The influenza vaccine is funded under the National Immunisation Program for the following groups:

- Aboriginal and/or Torres Strait Islander children aged 6 months to < 5 years
- Aboriginal and/or Torres Strait Islander persons aged ≥ 15 years
- All adults aged ≥ 65 years
- All persons aged ≥ 6 months who have a medical condition which increases the risk of influenza complications
- Pregnant women (during any stage of pregnancy)

Influenza vaccination is also strongly recommended, but not funded, for other groups who are at increased risk of influenza and its complications or at risk of transmitting the virus. This includes

staff of child care centres, aged care facilities, health care workers, homeless people and persons providing essential services.

Health care workers are a particular high risk group as they are exposed to influenza more than anyone else in the community and are able to spread the disease to patients who may be more susceptible to infection or likely to have serious complications. The role healthcare staff play in prevention of influenza related illness cannot be underestimated – both for their own health and that of their patients. Prevention through infection control measures needs to be routine, and vaccination of health care staff has been shown to prevent deaths, reduce staff absenteeism and reduce transmission.^{1,2}



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Outbreaks in residential care facilities

Oseltamivir

In residential care facilities, Oseltamivir (Tamiflu) is recommended for all uninfected residents during an outbreak (regardless of vaccination status) and for unvaccinated staff. The immune response to the influenza vaccine wanes with age and although residents in aged care facilities in FNQ have excellent Influenza vaccination coverage, vaccination rates in staff and visitors remain poor. A recent Cochrane review found that Oseltamivir is effective as prophylaxis in households³. Nursing homes are considered a “household”, albeit

with residents who are at much higher risk of complications from influenza. Additionally, an Australian randomised controlled trial in RACFs found a significant reduction in the influenza attack rate and a significant reduction in the duration of the outbreak.⁴

Testing

Routine laboratory testing of all potential cases of influenza is not considered necessary for public health management of community-acquired cases. However, consideration should be given to testing for patients at a higher risk of complications of influenza, including:

- People with severe influenza-like illness who are hospitalised or who are critically ill;
- People at an increased risk of severe disease including pregnant women and those

with underlying chronic medical conditions;

- People in high-risk settings who may be part of an influenza-like illness outbreak, particularly individuals living in a residential care setting;
- Health care workers who work in high-risk settings such as residential care facilities; and patients in primary care or outpatient settings where the result will guide clinical management.

In residential care settings, testing plays a pivotal role in determining the most appropriate control and prevention measures and should be a priority. PCR test on a nasopharyngeal swab is the preferred and most reliable method of diagnosis for influenza.

Further information:

<http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/ATAGI-advice-influenza-vaccines-providers>
<https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/diseases/influenza/default.asp>

References:

1. Hayward, A, Harling, R, Wetten, S, et al. Effectiveness of an influenza vaccine programme for care home staff to prevent death, morbidity, and health service use among residents: cluster randomised controlled trial. *BMJ*; 2006;333:1241.
2. Pearson, M., Bridges, C. & Harper, S. Influenza Vaccination of Health-Care Personnel Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP). *MMWR Recommendations and Reports*; 2006; 55(RR02):1-16.
3. Jefferson T, Jones MA, Doshi P, Del Mar CB, Hama R, Thompson MJ, Spencer EA, Onakpoya IJ, Mahtani KR, Nunan D, Howick J, Heneghan CJ. (2014) Neuraminidase inhibitors for preventing and treating influenza in adults and children. *Cochrane Database of Systematic Reviews* 2014, Issue 4. Art. No.: CD008965. DOI: 10.1002/14651858.CD008965.pub4
4. Booy R, Lindley RI, Dwyer DE, Yin JK, Heron LG, et al. (2012) Treating and Preventing Influenza in Aged Care Facilities: A Cluster Randomised Controlled Trial. *PLoS ONE* 7(10): e46509. doi: 10.1371/journal.pone.0046509

Count of notifications for selected conditions for Cairns and Hinterland Hospital and Health Service and Torres and Cape Hospital and Health Service

TOTAL	Cairns & Hinterland	Torres Strait & Cape York	TOTAL
(1 January 2016 – 30 June 2016)			
Acute Rheumatic Fever	8	<5	~12
Barmah Forest Virus Infection	47	18	65
Campylobacter	250	8	258
Chlamydia (STI) *	1,199	426	1,625
Cryptosporidiosis	167	23	190
Dengue Fever	64	26	90
Gonorrhoea (STI) *	210	124	334
Group A Streptococcal Infection	24	7	31
Hepatitis A (All)	<5	<5	<5
Hepatitis B (All)	52	20	72
Hepatitis C	136	10	146
Influenza (Lab Confirmed)	409	19	428
Leptospirosis	49	0	49
Malaria (All)	<5	0	<5
Measles	<5	0	<5
Melioidosis	12	6	18
Meningococcal Infection (Invasive)	<5	0	<5
Pertussis	13	<5	17
Pneumococcal Disease (Invasive)	6	<5	~10
Q Fever	14	0	14
Ross River Virus Infection	216	23	239
Rotavirus Infection	74	35	109
Salmonellosis (All)	221	39	260
Shigellosis (All)	<5	0	<5
Syphilis (Infectious)	110	18	128
Varicella (Chicken Pox and Unspecified)	211	16	227
Varicella (Zoster)	<5	0	<5
Yersiniosis	42	<5	~46
Zika Virus	<5	0	<5

*Note: These data represent notifications. Conditions may be notified more than once for some individuals over the reporting period.

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Useful web links:

- [Travel Vaccination advice for GPs](#)
- [Communicable Disease Control Guidance and Information](#)
- [Immunisation information for health professionals](#)
- [RHD and ARF guidelines](#)
- [Clinical guidelines for sexual health](#)
- [Homepage for Tropical Public Health Services \(Cairns\)](#)