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June 2019

Sullivan Nicolaides PATHOLOGY
Quality is in our DNA

Q fever: Can SNP help you to improve vaccination rates?

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Australia currently has one of the highest reported notification rates for Q fever in the world (Figure 1). This is despite the fact that Australia is the only country in the world that offers vaccination to prevent the consequences of infection.

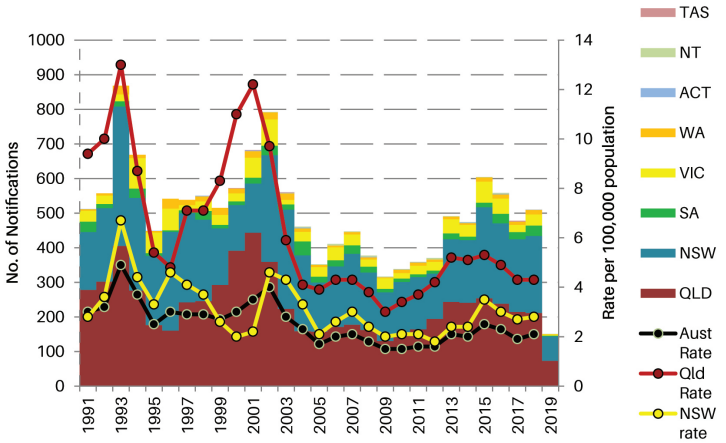

Figure 1 Notifications Q fever 1991 - 2019* Rates per 100,000 population

Uncomplicated Q fever is a febrile illness that may be undifferentiated or, associated with protean manifestations. Though hospital admissions are common in symptomatic acute Q fever, mortality associated with acute infection is rare. Early treatment may reduce the risk of later development of persistent focal infections. International literature would suggest that the burden of morbidity and mortality associated with persistent focal infection occurs in approximately 4% of those infected, including asymptomatic infections, and manifests as endocarditis and other endovascular lesions, and in children as chronic recurrent focal osteomyelitis. Persistent fatigue also affects a large number of people following Q fever infection; although the exact pathogenesis of this is unknown, the impact on quality of life can be debilitating.

Seroprevalence studies suggest increased susceptibility beyond traditionally recognised risk factors. The source of infection for seropositive individuals with limited exposure to sheep, cattle or goats is unknown, but several possibilities exist. Interaction with cats, dogs or native animals may account for some sporadic and urban cases. Recent descriptions of small outbreaks in veterinary clinics and catteries in Australia have highlighted the fact that companion animals are potentially unrecognised sources of sporadic Q fever cases. The spores of *Coxiella burnetii* can survive for long periods in the environment, and only a small infective dose is required to cause human infection. In the absence of direct animal contact, airborne exposure through contaminated dust particles is likely to be of importance. In an Netherlands outbreak, living within 5km of a large dairy goat farm was identified as an important risk factor.

Whilst it is important to identify non-traditional risk factors for Q fever, even provision of the vaccine to those at known risk remains problematic. Rates of infection in abattoir workers has decreased substantially since the introduction of workplace vaccination programmes; awareness and knowledge of the availability of an effective vaccine in other at-risk groups remains poor. A major deterrent is that prevaccination screening using both humoral antibody and cell-mediated intradermal skin testing is required. This is required to reduce the likelihood of severe local reactions to the vaccine in individuals who may have been previously exposed to Q fever but are unaware of their status. Access to skin testing, the requirement for at least two visits prior to vaccination, and the personal costs associated with these, remain significant deterrents.

In order to help facilitate vaccination and overcome the difficult prevaccination requirements and improve vaccine coverage of those at risk, Sullivan Nicolaides Pathology has increased the availability of skin testing, a requirement prior to vaccination. A list of collection centres that provide prevaccination skin testing can be found at www.snp.com.au. If only serology is required, and the primary care practice performs skin testing, serology with a rapid turnaround time is available at any collection centre.

SNP is also actively involved in research to improve prevaccination screening methods. New strategies utilising gamma interferon production on exposure to *Coxiella burnetii* antigen (Q Detect) may in the future serve as a surrogate of prior exposure and simplify the prevaccination screening protocols. In the meantime, it is important to facilitate and encourage vaccination for all those at risk. Unfortunately, this does not include children under the age of 15 years at present, although studies that include this age group are underway.

Test requests:	Q fever Prevaccination Serology and Q fever Skin Test
Clinical notes:	Please specify if prevaccination.
Sample:	Serology: SST (minimum 1mL of blood) / Skin test only performed at designated collection centres
Transport:	Ambient

Reference
Graves S, et al A preliminary comparison of 5 assays for detecting past exposure to Coxiella burnetii for use prior to human Q fever vaccination. ESCMID 2018 Madrid

Australian Immunisation Handbook recommended groups for Q fever vaccine.

People at risk of Q fever include:

- abattoir workers
- farmers
- stockyard workers
- shearers
- animal transporters
- veterinarians, veterinary nurses and veterinary students
- professional dog and cat breeders
- agricultural college staff and students
- wildlife and zoo workers who work with high-risk animals
- animal refuge workers
- laboratory workers who handle veterinary specimens or work with *C. burnetii*
- other people exposed to high-risk animals, particularly cattle, camels, sheep, goats and kangaroos (including their products of conception, such as placental tissue and birth fluids).

The facts about faxes

To better look after our patients, SNP has introduced a centralised protocol for managing patient referrals that are received by fax.

As part of the rapidly changing telecommunications landscape, we no longer install faxes in our collection centres. To ensure faxed referrals are acknowledged, and that we are able to collect as per the referring doctor's requirements, we have introduced a new system to manage faxed referrals.

Faxed referrals are now receipted centrally and, as all SNP collection centres are now connected across our network, we can provide the instructions in the faxed referral electronically to any collection centre. This means that, no matter which collection centre a patient chooses to attend, the instructions in your referral are available to guide the collection process.

We have listed the central fax number on our website. We ask that you update the address book in your fax machine and any lists that you may hold locally to the central fax number (07) 3377 1913.

Sullivan Nicolaides PATHOLOGY
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Lactose intolerance: lactase persistence gene test now available

Dr David Kanowski BSc(Hons 1st Class) MBBS FRCPA
Pathologist, Department of Biochemistry, Sullivan Nicolaides Pathology

We now offer a genetic test to differentiate between primary lactose intolerance, due to lactase deficiency, and secondary lactose intolerance, due to other more serious conditions that affect the small bowel.

The ability to digest lactose is important for the normal growth of infants, as it is the predominant sugar in milk. In much of the world's population, it is common to lose this ability after infancy, typically at age 2–12 years. However, in individuals descended from populations such as those of northern Europe, where cow's milk has historically been consumed, the ability to digest lactose frequently persists into adulthood. This is known as lactose tolerance or lactase persistence.

Apart from primary lactose intolerance due to the absence of any genetic lactase persistence variant, there are many secondary causes of lactase deficiency. These include infectious enteritis, coeliac disease and Crohn's disease. In an infant, infectious enteritis is the commonest cause. As this deficiency is transient, testing is generally not required as it will resolve spontaneously.

In the past, testing faeces of infants for reducing substances was often performed as a surrogate test for lactose present in the faeces. It is not generally performed today as it frequently had false positive results, and could not differentiate between primary and secondary causes. Adults with suspected lactose intolerance had other testing options. Lactase deficiency could be diagnosed by a breath hydrogen test following a lactose challenge, or by measurement of the disaccharidase enzymes in a biopsy of the small intestine mucosa. However, these tests were generally not suitable for young children.

The genetic testing now available will detect the common genetic variant that causes lactase persistence in Europeans (LCT-13910C>T), together with three other variants that are more common in non-Europeans. A positive result confirms lactase persistence, ruling out genetic lactose intolerance.

A doctor bulletin and patient brochure is now available. Please contact your Medical Liaison Manager on 1300 767 284.

What to order: Lactase persistence gene
What to collect: 1 x EDTA (dedicated) with minimum 4mL of blood
Transport: Ambient
Cost: $75. No Medicare rebate

Cumulative graph reports – restyled and now electronically delivered

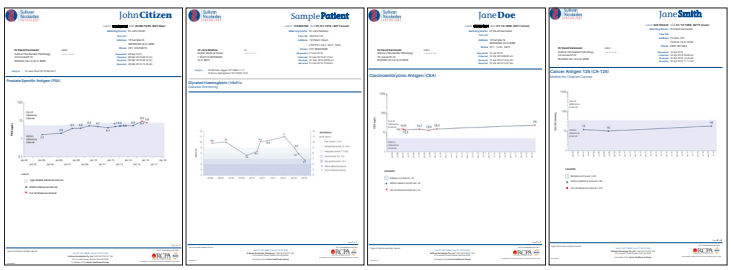
SNP provides cumulative reporting for a wide range of pathology results as a standard feature of reporting. For some of these tests, cumulative reports are also provided in graphical representation; until now, these have been delivered in printed format only.

From June 10, 2019 we are introducing restyled cumulative graph reports with a clearer design and layout; these will be delivered in PDF format as per your pathology report delivery preference.

The first reports to be released in the new format are PSA, HbA1c, CEA and CA125. These will be followed by a succession of releases as the other tests are ready to be issued in the new format.

We aim to offer customisation in report delivery; if you would prefer to receive cumulative reports only in standard text format, please contact our Doctor Services team on 1300 767 284 and we will adjust your reporting preferences accordingly.

For more information about cumulative reports, please contact your Medical Liaison Manager on 1300 767 284.



Pathologist Profile - Dr Prasad Jayaratne MBBS, FRCPA

Dr Prasad Jayaratne is a histopathologist at Sullivan Nicolaides Pathology's Townsville laboratory where he reports across a range of general surgical pathology.

He graduated in medicine from the James Cook University, Townsville, in 2010 and completed his internship and residency at the Townsville Hospital. Having developed a particular interest in the diagnostic aspect of medicine, he went on to train in anatomical pathology in Brisbane, rotating through several laboratories including those of Sullivan Nicolaides Pathology, the Royal Brisbane and Women's Hospital, and the Prince Charles Hospital. He was awarded Fellowship of the Royal College of Pathologists of Australasia in 2019 and joined Sullivan Nicolaides Pathology the same year.

Dr Jayaratne reports on a broad range of surgical cases, including gastrointestinal, urological, head and neck, and breast malignancies. He also performs frozen sections, working closely with surgical teams at the Mater Private Hospital.

He attends regular interdisciplinary clinical meetings with colleagues in other specialties on breast, gastrointestinal, lung and urological cases.

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Meridio 304817 June 2019
Correct at time of publication.