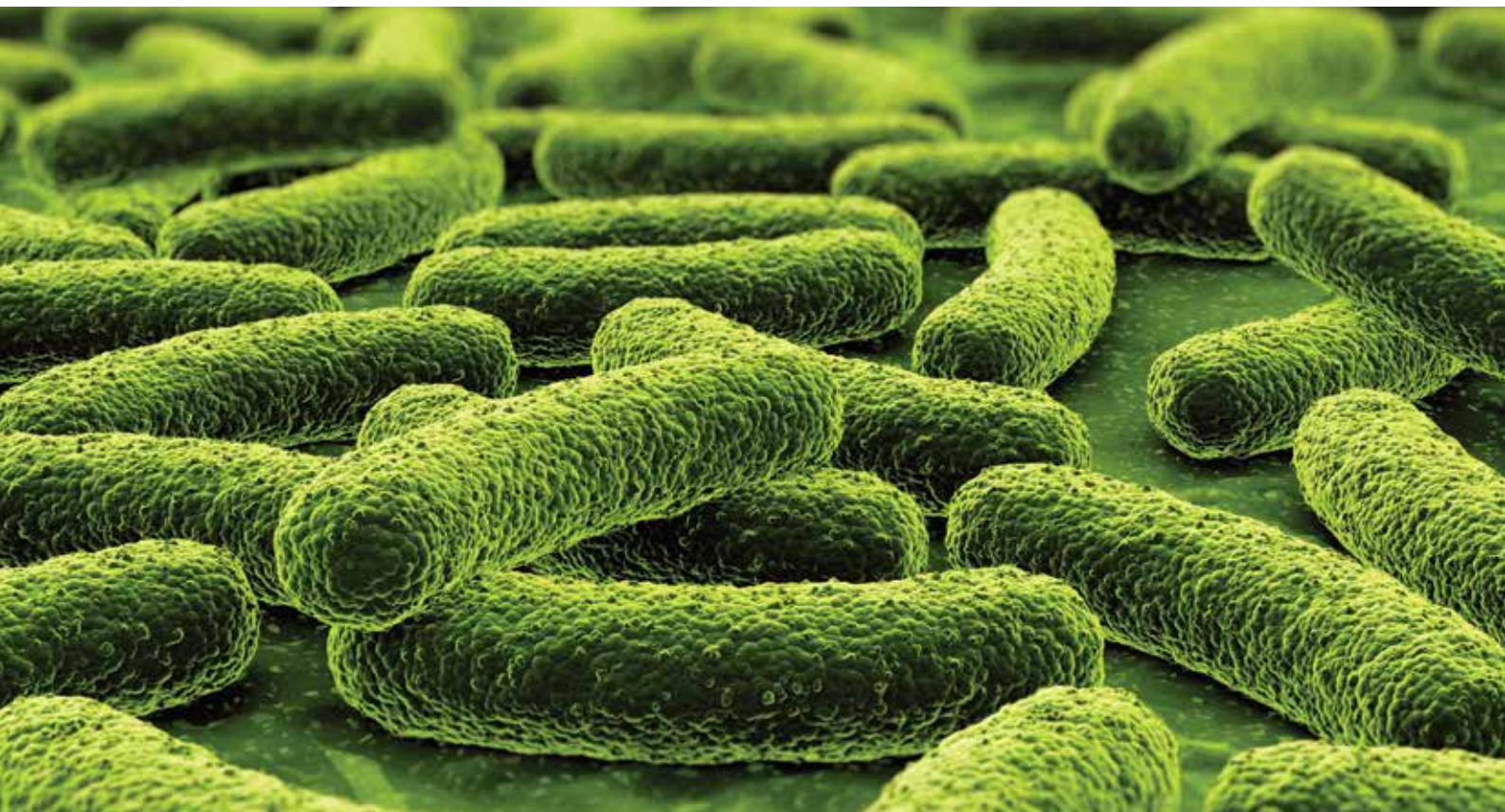


- > *Listeria monocytogenes* Overview
- > Unexpected Critical Results
- > iGeneScreen™
- > Modified Pap Smear Codes
- > Testing for Phaeochromocytoma
- > Clinical Education Update



An overview on *Listeria monocytogenes*

Dr Renu Vohra MBBS MD FRCPA

Recent national *Listeria* outbreak

Listeriosis is a foodborne disease associated with significant mortality. In a recent national investigation of listeriosis outbreak there have been 33 laboratory-confirmed cases of invasive listeriosis (predominantly septicaemia) identified in multiple states and territories with onset dates of illness between 8 August 2012 and 1 March 2013.

As of 6th of May, among the 33 cases, there have been 4 deaths and a miscarriage at 19 weeks gestation. All 33 strains of *Listeria monocytogenes* were found to be the same genotypically (serotype 4b, 4d, 4e; binary gene type 254/255; PFGE 119A:44A:1).

The outbreak has been related to consuming soft cheese manufactured by Jindi Cheese Pty Ltd. The Jindi cheese company placed a voluntary recall on all its products on two occasions,

18 December 2012 and 18 January 2013. In addition to food recalls, multiple health department media releases were distributed to inform the public for those who may have still had contaminated product in their household.

The outbreak strain of *Listeria monocytogenes* was detected in multiple Jindi cheese products sampled from retail stores by health department food safety agencies prior to the recall. Four jurisdictions (VIC, NSW, SA, QLD) collected retail samples of soft cheese which related to product that was later recalled. Eight of 46 retail samples were positive for the outbreak strain. Five cheese samples collected from the homes of cases tested positive for the outbreak strain. Ongoing retail sampling and surveillance for new cases still ongoing (personal communiqué - epidemiologist, OzFoodNet).

Epidemiology

Listeriosis is mainly a foodborne infection, and sporadic cases as well as epidemics have been linked to contaminated food. The organism is widely distributed in the environment, commonly found in soil, decaying vegetation, sewage, water and as part of faecal flora in many animals. Many foods available in the supermarkets are contaminated with *L. monocytogenes* including raw vegetables, raw milk, cheese, meats, including fresh, frozen and processed chicken and beef. The ability of *L. monocytogenes* to tolerate high and low temperatures as well as high salt makes *Listeria* of particular concern if present in refrigerated foods that are consumed without further cooking.

While *Listeria* can be isolated from stool cultures of 5% of healthy individuals vaginal carriage is lower. Pathogenic strains have been detected in the gastrointestinal (GI) tract of asymptomatic individuals, including those at risk (such as pregnant women or immunocompromised patients). Exposure to and transient colonisation of the GI tract by *L. monocytogenes* appears to be common, but invasive disease is rare.

Listeriosis is a very rare disease in humans. In Australia, the incidence of listeriosis is low with about 2.5 - 3.6 cases per million population per annum. There are also about 50 - 60 nonperinatal and 5 - 10 materno-foetal infections reported to health departments annually. Mortality rates of about 10 - 44% in foodborne outbreaks have been reported. In Queensland, usually 5 - 10 cases of sporadic invasive listeriosis are reported annually. OzFoodNet runs a national surveillance program for *Listeria monocytogenes* which involves all states and territories and performs serotyping, binary gene typing, multi-locus variable number tandem repeat analysis (MLVA) and pulse field gel electrophoresis (PFGE) on all human isolates. In 2010, OzFoodNet sites reported 71 cases of *Listeria monocytogenes* infection, a rate of 0.3 cases per 100,000, which is consistent with the 5-year historical mean of 0.3 cases per 100,000 (65 cases).

Mode of transmission

Transmission usually occurs through ingestion of contaminated foods leading to foodborne outbreaks or sporadic cases of listeriosis. Apart from the immune status of the host, other factors that influence whether or not invasive disease occurs include the virulence of the infecting strain and the size of the inoculum. The infective dose is unknown, but is estimated to be between 10^4 - 10^6 organisms/g of ingested product, although this estimate might be lower in groups at risk.

Transmission can also occur from mother to foetus in utero or passage through infected birth canal. Nosocomial transmission leading to outbreaks of listeriosis in nurseries have been documented.

The incubation period is variable from 3 - 70 days following a single exposure to an implicated product. The median incubation period is three weeks.

Microbiology

L. monocytogenes is a small, facultatively anaerobic, gram-positive, flagellated, linear motile rod, which is non-spore forming and microscopically difficult to distinguish from commensal Diphtheroids. *Listeria* grows well in broth, blood agar and most routine culture media.

Among the current seven species in the genus *Listeria*, *Listeria monocytogenes* is the only pathogenic species in humans. Thirteen serotypes of *L. monocytogenes* are known (1/2a, 1/2b, 1/2c, 3a, 3b, 3c, 4a, 4ab, 4b/4bx, 4c, 4d, 4e and 7). 98% of all the documented human listeriosis cases are caused by serotypes 1/2a, 1/2b and 4b. Serotypes 4a and 4c are rarely associated with outbreaks despite their frequent isolation from a variety of food and environmental specimens.



Pathogenesis

Listeria is facultative intracellular organism. After ingestion of *Listeria monocytogenes*, pathogen and host factors, as well as the dose of organisms, determine if invasive infection occurs. Immunity to *Listeria* is mainly due to cell mediated immune response. T-cell lymphokine activation of macrophages clear *Listeria* from the blood. Also Interleukin (IL)-18 appears to play a role in protection against *Listeria*. *Listeria* poses a cell surface protein Internalin, which interacts with the E-cadherin, a receptor on epithelial cells resulting in phagocytosis. Once inside the cells it escapes the phagosomes through the action of listeriolysin O, a major virulence factor and therefore avoids intracellular killing. It then undergoes intracytoplasmic multiplication and uses a unique mechanism of spreading from cell-to-cell, without exposing itself to an extracellular environment. It does so by inducing host cell actin polymerisation and spread to neighboring cells by forming pseudopods extensions from the host cell. Virulence genes are found on an 8.2 kb pathogenicity island and includes genes coding for listeriolysin O and Internalin.

Clinical manifestation

Disease in humans usually manifested as meningoencephalitis and/or septicaemia in newborns and adults. Those at highest risk are elderly, immunocompromised or pregnant women. The onset of meningoencephalitis (which is rare in pregnant women) can be sudden with onset of fever, intense headache, nausea, vomiting and signs of meningeal irritation, or it can be subacute particularly in immunocompromised and elderly. Despite adequate antibiotic treatment, the overall mortality of central nervous system (CNS) infection is still high (25 to 30%) and neurological sequelae are frequent. However, adequate therapy might be delayed, since the current first-line treatment for CNS infections relies on extended-spectrum cephalosporins, which are inactive against *L. monocytogenes*.

In normal immunocompetent adults the disease usually presents an acute febrile illness or can be asymptomatic. Febrile gastroenteritis has been reported in foodborne outbreaks. The other clinical manifestations like localised internal or external abscess, endocarditis and localised infections are rare.

Listeriosis is 18 times more common in pregnancy (12/100,000) than in the non-pregnant population (0.7/100,000). Infection usually occurs in the third trimester, thought to be related to decline in cell mediated immunity at 26 - 30 weeks of gestation. The presentation of listeriosis during pregnancy includes mild flu-like symptoms. Bacteraemia usually manifests as acute febrile illness with headache, myalgia, arthralgia and backache.

While maternal illness due to listeriosis may be mild, neonatal illness is often severe and may be fatal. Neonatal infection follows maternal sepsis and chorioamnionitis and can result in abortion, stillbirth, premature delivery or neonatal meningitis in those developing illness in the weeks after delivery. The cases fatality rate in newborns is 30% and approaches 50% if onset occurs in first 4 days.

Diagnosis

ASYMPTOMATIC PATIENTS WHO GIVE A HISTORY OF EATING CONTAMINATED FOOD

No tests are available for diagnosing *Listeria* infection.

SYMPTOMATIC PATIENTS

Clinically, differentiation between *Listeria* infection and other infectious diseases which cause fever and constitutional symptoms is not possible. Therefore, diagnosis can only be established by culture of the organism from clinical specimens.

Diagnosis requires isolation from sterile clinical sites like blood, CSF, amniotic fluid, joint fluid etc.

Direct examination

Specimens are examined by direct microscopy. Gram positive rods seen on gram stain on specimens from CSF, blood culture and other sterile sites are always communicated to the treating clinician by a pathologist to alert the clinician about the possibility of *Listeria*.

Culture

The specimens are cultured in the laboratory and are reported with susceptibilities within 48 - 72 hours. Traditionally culture results of *Listeria* in the laboratory were delayed due to extensive further tests required to confirm the growth as *L. monocytogenes*. Species identification is important to differentiate *Listeria monocytogenes* from non pathogenic *Listeria*. With new identification system, namely Matrix Assisted Laser Desorption Ionization Time-Of-Flight (MALDI-TOF) available at QML Pathology, the identification of growth as *Listeria monocytogenes* can be confirmed within minutes after the growth on agar plates. This leads to reporting of *L. monocytogenes* within 18 - 24 hours.

A negative culture does not rule out the diagnosis of *Listeria* in the presence of a strong clinical suspicion. Culture is specific but not very sensitive as the number of organisms in the specimen may be low or due to previous treatment with inadequate therapy.

Stool culture for *Listeria* is not indicated in patients with systemic listeriosis. However, in foodborne outbreaks of listeriosis, a stool sample can be submitted to the laboratory with specific request for *Listeria* along with blood cultures from symptomatic patients.

Serology

Serological tests are unreliable and are not recommended for diagnosis of past or acute listeriosis.

Molecular

Molecular tests are not available to detect *L. monocytogenes* from clinical specimens.

Treatment

Early recognition and intervention are associated with improved outcome. Ampicillin is considered to be the drug of choice. For penicillin allergic patients, co-trimoxazole can be used. Cephalosporins including third generation cephalosporins are not effective and should never be used.

Prevention

FOR ALL PEOPLE	ADDITIONAL PRECAUTIONS FOR PERSONS AT HIGH RISK
Wash raw vegetables before eating	Pregnant women and immunocompromised people should avoid soft cheeses such as Brie, Camembert and Mexican-style cheeses. They should avoid deli meats and eat only properly cooked meats and pasteurised dairy products
Thoroughly cook raw food from animal sources such as beef, poultry and pork	
Ensure hands, knives and cutting boards are washed immediately after handling uncooked foods	
Keep uncooked meats separate from vegetables	
Avoid consumption of unpasteurised milk or foods which are made from raw milk	Left over foods or ready to eat foods should be reheated till steaming hot before eating

References

1. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual report of the OzFoodNet network, 2010 Communicable Diseases Intelligence Volume 36 No 3 - September 2012
2. Mandell, Douglas and Bennett's: Principles and Practice of Medicine 6th edition, Volume 2

Pathologist Profile

Dr Renu Vohra MBBS MD FRCPA

PATHOLOGIST IN CHARGE: MICROBIOLOGY & IMMUNOLOGY

Phone: (07) 3121 4444

Email: Renu.Vohra@qml.com.au

1994: Obtained an MD in Microbiology, University of Delhi, India.

1997: Commenced training as a Pathologist in Australia.

2000: Obtained fellowship of the Royal College of Pathologists.

1999 - 2002: Worked in private pathology in QLD, progressing from a Registrar position to a Consultant in Microbiology.

Also worked as Clinical Microbiologist with the Queensland Health Pathology Service.

2004: Joined QML Pathology's Microbiology Department in September.

Special Interests: Bacteriology and molecular microbiology.



After-hours pathology: unexpected critical results

Dr Charles Appleton MBBS (Qld) FRCPA

Picture this:

Mrs Jones is sitting watching television downstairs at 8.30pm one night. Her little boy James is unwell and is sleeping fitfully.

The telephone rings.

Mrs Jones: "Hello?"

Voice: "Hello, is this the Jones' residence?"

Mrs Jones: "Yes."

Voice: "Are you a relative of James Jones?"

Mrs Jones: "Yes, I'm his mother. Why? Who is calling?"

Voice: "Good evening Mrs Jones. You don't know me but I am Dr Charles Appleton from QML Pathology. You took James to see Dr Smith this afternoon and he ordered a blood test which my staff collected at 4:30pm at the Murarrie collection centre."

Mrs Jones (sounding anxious): "Yes."

Voice (Dr Appleton): "I am very sorry to bother you at this time of night but we have performed the tests which Dr Smith requested and I'm afraid that one of the tests is quite abnormal. We have been trying to contact your doctor and we have been unable to reach him, and so I have decided that I should contact you at home myself."

And so begins the family's experience of dealing with a child with insulin-dependent diabetes.

Would it not have been better for the call to have come from Dr Smith who knows James and his current illness, who knows the family's strengths and weaknesses and most importantly, is known by the family to be 'their doctor'?

Without the doctor's out-of-hours contact number, the laboratory is 'out on a limb' in these potentially life-threatening situations.

We provide analytical services 24 hours a day, 7 days a week, and under these circumstances, a critical result will occasionally emerge

during the evening. Of the 2000 tests which are routinely performed in the laboratory, only a handful require immediate intervention if sufficiently abnormal. This usually equates to fewer than five requests per night requiring anything other than routine reporting. On average, no doctor should expect to be called after hours more than once every few years.

If an abnormal finding would be unlikely to prompt any change in management prior to the treating doctor's return to practice, then it is not deemed to be worthy of disturbing the doctor after hours. If a particular abnormal finding has been identified previously in the same patient in the recent past, again it is not seen as warranting after-hours contact with the treating doctor.

Finally, if the clinical notes on the request form indicate that the condition is known to the doctor, the finding is not phoned to the treating doctor's home.

In some cases, however, the laboratory is unable to reach the doctor because the practice's answering service refers callers elsewhere and the doctor's after-hours number is unknown. Hospitals and deputising services are at a disadvantage in treating such a patient in circumstances where the patient's clinical details are unknown. Indeed in the past, many deputising services would decline to act when contact is initiated by the laboratory.

If no doctor involved in current management of the patient can be contacted, one of the pathologists from the laboratory will contact the patient directly and suggest that he/she should present to a local hospital for medical attention. Clearly, this is far from ideal. A patient receiving a telephone call at an unusual time from an unfamiliar doctor is often very suspicious or frightened, regardless of the nature of the identified laboratory abnormality.

To help QML Pathology to assist you in your ongoing care obligations to your patients, your cooperation in providing your after-hours contact details would assist us greatly. Please be assured that such details will be kept strictly confidential and would only be used for the above stated purpose. Please contact our Doctor Maintenance Department on (07) 3121 4683.

Dr Charles Appleton, Pathologist in Charge: Biochemistry.



iGeneScreen™

Safe. Non-Invasive. 99% Accurate.

Introducing iGeneScreen™, a quick and simple prenatal test available at selected QML Pathology collection centres, or in your rooms, from 12 weeks gestation onward. Unlike Amniocentesis and CVS, which carry a small risk of miscarriage, iGeneScreen™ is a non-invasive test requiring only 10 ml of blood from the expectant mother. iGeneScreen™ is more than 99% accurate in the detection of Trisomy 21, Trisomy 18 and Trisomy 13 with a false positive and false negative of less than 1%.

A SUPERIOR TEST BASED ON PROVEN RESEARCH

iGeneScreen™ has been validated prospectively on 11,105 cases, the largest prospective study for any non-invasive prenatal tests to date. The study showed iGeneScreen™ to be more than 99% accurate in detecting chromosomal abnormalities, in particular Down Syndrome and Edwards Syndrome. The study was independently peer-reviewed and published in *Prenatal Diagnosis*, an internationally recognised publication, and the Official Journal of the International Society for Prenatal Diagnosis (ISPD).

GENERAL INFORMATION FOR CLINICIANS

iGeneScreen™ is a highly efficient, non-invasive prenatal screening test for fetal Trisomy, based on Massively Parallel Sequencing (MPS), that analyses circulating cell-free fetal DNA extracted from a maternal blood sample. Whilst all screening tests carry a false positive and false negative rate, iGeneScreen™ is less than 1% when testing for Trisomy 13, 18 and 21 in the current pregnancy. iGeneScreen™ is conducted for QML Pathology jointly by Singapore-based INEX and BGI Clinical Laboratories, the world's largest sequencing and bioinformatics institute with presence in Asia, Europe and the Americas. iGeneScreen™ has a Detection Rate of >99%, a false positive rate of <1 and a false negative rate of <1.

iGeneScreen™ can be performed as early as 12 weeks of gestation. Fetal genetic material is known to circulate in maternal blood in earlier gestations, however, the proportions are lower the earlier the gestation. In order to keep the recall rate low (<3%), it is advisable to take the maternal blood sample at or after 12 weeks gestation.

REQUEST, RESULTS AND REPORTING

The iGeneScreen™ request form and informed consent form should be completed and signed by the requesting Obstetrician and patient. Both forms (available for download from www.qml.com.au) must accompany the collected specimen to the laboratory. Patients are required to sign the informed consent form, which states the accuracy and limitations of iGeneScreen™ prior to any collection of a specimen.

The iGeneScreen™ prenatal test is only available at selected QML Pathology collection centres and the request for testing must be from the attending Obstetrician.

All collections must be pre booked. For details, please phone the QML Pathology Duty Scientist on (07) 3121 4344 or (07) 3121 4346. In 90% of cases; the turnaround time is 14 business days. If a delay in the results is likely, the iGeneScreen™ team will contact the doctor early to discuss the imminent delay. Patient results will be sent directly to the requesting clinician.

COSTS FOR YOUR PATIENTS

The iGeneScreen™ test is not eligible for a Medicare rebate. Out of pocket cost for patients is \$1,300.00*. This cost is payable by credit card, bank cheque or money order at time of your patients pathology collection. Personal cheques are not accepted.

MANAGING OUTCOMES

A SCREEN NEGATIVE result would suggest a low risk for the tested trisomies. A SCREEN POSITIVE result however, even on a highly efficient screening test such as iGeneScreen™, requires confirmation by amniocentesis and karyotyping.

For intermediate results, there is a 3% chance of the necessity of a repeat blood sampling. This will be determined as part of the Quality Control (QC) step at the start of the process. The repeat sampling could be due to a number of reasons, such as damage to blood sample or insufficient fetal DNA. The expected turnaround time would be in this case an additional 5 working days to account for the shipping of the second sample. The iGeneScreen™ cost is incurred only when the sample begins the MPS cycle.

The sensitivity and specificity are at >99% for singleton pregnancy after 12 weeks in gestation. The usefulness of iGeneScreen™ has not been established in multiple pregnancies, mosaicism, mothers with chromosomal aneuploidies, chimera, chromosome microdeletion, microduplication and in mothers who have had received allogeneic blood transfusion, transplantation or stem cell therapy. The presence of aberrant or exogenous DNA would affect the iGeneScreen™ result.

For further clinical article information, please contact Dr Kerry DeVoss, Dr Julia Chang or Dr Charles Appleton on (07) 3121 4444.

Reference:

1. Dan S, Wang W, Ren J, Li Y et al. Clinical application of massively parallel sequencing-based prenatal noninvasive fetal trisomy test for trisomies 21 and 18 in 11 105 pregnancies with mixed risk factors. *Prenat Diagn*. 2012 Nov 9;1-8. doi: 10.1002/pd.4002. [Epub ahead of print]

Resources:

- Hill M, Barrett AN, White H, Chitty LS. Uses of cell free fetal DNA in maternal circulation. *Best Pract Res Clin Obstet Gynaecol*. 2012 Oct;26(5):639-54.
- Choolani M, Biswas A. Patients' perception of risk: informed choice in prenatal testing for foetal aneuploidy. *Singapore Med J*. 2012 Oct;53(10):633-7.

*Fees are correct at time of printing and may be subject to change. iGeneScreen™ is an INEX trademark. The same test is also called NIFTY, a BGI trademark for Non-Invasive Foetal Trisomy tests.



Modified Pap smear codes

Dr Jason Stone MBChB FRCPATH FRCPA

The QML Pathology Cytopathology Department is continually looking at ways of improving our service. In response to ongoing clinician feedback and to keep the terminology used in our reports clinically meaningful and up to date with current medical knowledge, we have reviewed the text used in compiling our cervical smear reports.

The changes are subtle and the general format is unchanged (this is guided by the National Cervical Screening Program Guidelines of 2005). Referrers will be pleased to note that we have removed unnecessary tautology and irrelevant text, and shortened the disclaimers, resulting in reports that are easier to read and interpret.

The most significant differences are the grouping of various cytological findings into common diagnostic categories. Instead of reporting a plethora of different low grade squamous changes (e.g., atypical repair, atypical metaplastic cells, HPV features, koilocytosis, mild dysplasia), these are now all grouped into just one of two categories – namely Possible Low Grade Squamous Intraepithelial Lesion or Low Grade Squamous Intraepithelial Lesion (LSIL).

In addition, changes consistent with CIN 2 and changes consistent with CIN 3 have now been united into just a single category of High Grade Squamous Intraepithelial Lesion (HSIL). The rationale for this is that both lesions are managed and followed up identically.

We will no longer be reminding clinicians to perform HPV testing in the follow up of treated, histologically-proven high grade disease.

Previously, this comment often led to confusion when patients had already been tested elsewhere, yet the results were not always reflected on the Pap Smear Register. In addition, clinical guidelines for HPV testing have been around since 2006 and most clinicians are already well acquainted with them.

In partnership with our sister laboratory Lavery Pathology, we have modified our reporting of high risk HPV test results. These results will now include a record of the collection media used. The terms 'Detected' or 'Not detected' for the high risk HPV types are used rather than 'Positive' or 'Negative'. In addition, we will specifically mention if HPV genotypes 16, 18 and 45 are found. These particular three subtypes are found in 70% of all cervical cancers worldwide.

Please note the National Cervical Screening Program is currently undergoing review with results expected to be published in mid 2014. Significant changes to the program are anticipated and consequently our reporting style will probably be reviewed once again after the changes are published.

These small changes to our practice are all part of QML Pathology's ongoing commitment to providing a high quality and efficient cervical screening service to women of QLD and northern NSW.

Thank you for your continued referrals and I welcome any feedback.

Dr Jason Stone, Head of Cytology Department



*We bulk bill all Pap smears,
for every woman, every time.**



Laboratory testing for pheochromocytoma

Dr Charles Appleton MBBS (Qld) FRCPA

For many doctors, urinary catecholamines and their metabolites remain the preferred tests for the diagnosis of pheochromocytoma and other neural crest tumours. With tumours which secrete episodically, a 24 hour collection is much more likely to 'catch' an episode than a random collection. However, in patients who are having distinct clinically evident episodes, a timed four or six hour collection starting at the commencement of symptoms may be diagnostic as a second test.

However we are seeing increasing numbers of requests for plasma catecholamines and plasma metanephrines. These tests appear very promising but currently, probably because of the out-of-pocket cost to the patient, they are predominantly used as second line tests.

The cost to the patient for plasma catecholamines (adrenaline/epinephrine and noradrenaline/norepinephrine) is substantial. Understandably, when we approach a patient with venepuncture needle at the ready, there is a remarkable physiological catecholamine release ('fight or flight') and so to obtain meaningful results, we are required to have the patient attend one of our special clinics where a doctor will insert and maintain an intravenous cannula and collect the blood sample after an appropriate time for the response to abate.

Further, when the results are reported, if the plasma catecholamines are elevated, we have to consider the possibility that any abnormal result reflects a more prolonged physiological response rather than tumour secretion.

In contrast, the collection for plasma metanephrines/metadrenalines is straightforward and can be performed at any QML Pathology collection centre. They are not affected by the acute stress response.

The more simplified collection requirements also contribute to the substantially lower cost to the patient.

We shall continue to collect blood samples for the purposes of screening for pheochromocytoma but in view of the above considerations, we shall perform plasma metanephrines on plasma catecholamine requests unless Dr DeVoss, Dr Chang or I have been contacted to let us know to arrange the special test.

Please contact myself, Dr Chang or Dr DeVoss on (07) 3121 4444 if you would like to discuss this further.

Pathologist Profile

Dr Charles Appleton MMBS (Qld) FRCPA

PATHOLOGIST IN CHARGE: BIOCHEMISTRY

Phone: (07) 3121 4512

Email: Charles.Appleton@qml.com.au

Dr Charles Appleton graduated from the University of Queensland in 1977 (MBBS), before starting work as a resident medical officer at the Royal Brisbane Hospital in 1978. In 1980, Dr Appleton became a registrar in pathology at RBH, before moving into the role of acting Assistant Chemical Pathologist.

Dr Appleton joined QML Pathology in 1985 as Chemical Pathologist, and was subsequently appointed Partner in Charge of Biochemistry.

For part of this time, he worked as Visiting Chemical Pathologist at the Repatriation General Hospital, Greenslopes. In 2003, ownership of QML Pathology changed and his position title was revised to Pathologist in Charge of Biochemistry.

Dr Appleton's special interests include use of computers in pathology result interpretation and reporting, legal aspects of drug testing, inborn errors of metabolism and calcium metabolism.

From the Clinical Education Desk

Well half the year is nearly over, and we are rapidly approaching the end of the GP Triennium. It is a good time for us to inform all clinicians of some of the achievements, statistics and general updates on the QML Pathology education focus this year.

The Cytology Pap Smear and Surgical Skin audits have continued to grow in popularity this year. Based on evaluations and feedback over the last two years, we envisage changes to the statistical data and reports for the next triennium, which will further assist clinicians in their day to day practice.

AUDIT RESULTS

- More than half of GPs and Specialists are registered with the audit programs statewide.
- Over a quarter of these clinicians are registered with both the Cytology Pap Smear and Surgical Skin audits.
- Over a quarter of doctors registered for both audits have completed all three calendar years.
- One quarter of all doctors registered have completed both audits.
- Over 60% of doctors who have completed the audits continue to participate for the clinical statistics and data.

QML Pathology will be holding three evening CPD events this year in South East Queensland; invitations to these will be sent out shortly. Each evening will be approved by the RACGP QI&CPD Program and will have 4 category 2 points available.

Once again, thank you to all who have participated so far. Congratulations to all who have completed the audits, and we encourage all clinicians who have not yet completed their audits to do so as soon as possible.

If you have any queries, please do not hesitate to contact us on phone (07) 3121 4506 or email education@qml.com.au.

Regards

QML Pathology Clinical Education

Cytology Pap smear audit request form

Surgical Skin audit request form

QUICK QUERIES

- Doctors are reminded to use the correct request forms for any samples to be included in the audits.
- **Surgical Skin audit** – All clinical information on the reverse of the green request form must be completed.
- **Cytology Pap Smear audit** – Please ensure the relevant tick boxes are filled in on the 'Tests Requested' section of the lavender request form.
- Please contact your local QML Pathology laboratory or Medical Liaison Officer if you require audit request forms.
- If you wish to stop receiving the monthly reports once you have achieved your category 1 points, please contact us on (07) 3121 4506 to let us know.
- We will contact you towards the end of this year, to register you for the audits for the next Triennium, commencing 1 January 2014.

No out-of-pocket pathology expenses for inpatients referred to QML Pathology

All major health fund holders, including Medibank Private and BUPA, can enjoy no out-of-pocket expenses for inpatient pathology tests performed by QML Pathology on Medicare rebatable tests. Now that's a reason to celebrate.

QML Pathology has agreements with the following health funds:

ACA Health Benefits Fund	GMF Health Fund	Medibank Private	Railway & Transport Employees RTEFS
AMA Health Fund	Gov. Employees Health Fund	Mutual Community	Redihealth
ANZ Health	Grand United Corporate Health	Mutual Health/Mercantile Mutual Health	Reserve Bank Health Fund
AOF WA	Grand United Health Fund	Navy Health	Senior Advantage
API Health Linx	Health Bonus	NRMA Health	SGIC Health
Australian Country Health	Health Care Insurance (HCF)	NSW Teachers Federation Health	SGIO Health
Australian Friendly Society	Healthguard Health Benefits	Onemedifund	Sunhealth
Australian Health Management	Health Partners	Phoenix Health Fund/ Phoenix Welfare Assoc.	Teachers Union Health QTU
Australian Union Health	Hospital Benefits Association (HBA)	Police Health	The Doctors' Health Fund DHFM
Australian Unity Health	Hospital Contribution Fund/ Health Care Fund	Q Health Cover	TIO Agent For NT
BUPA	Illawarra Health Fund	Queensland Country Health	Transport Health
CBHS Health Fund	IOOF Health Victoria		Westfund
CUA Health Fund Limited (Credicare)	IOOF NSW & WA		
Defence Health	Lysaght & Peoplecare Health Insurance		
Druids Friendly Society	Manchester Unity Australia		
Forester Friendly Society			

Collection Centre Updates

NEW COLLECTION CENTRES

BEAUDESERT.....07 5541 3805

Beaudesert General Practice
35a William Street

Opening Hours
Mon - Fri: 6.30am - 11.30am

CAIRNS.....07 4051 8944

Central Plaza Doctors Medical Centre
58 - 60 McLeod Street

Opening Hours
Mon - Fri: 8.00am - 1.00pm
1.30pm - 4.00pm
Saturday: 8.00am - 12.00pm

CASINO.....02 6662 3707

Suite 2
132 Walker Street

Opening Hours
Mon - Fri: 7.30am - 1.00pm
2.00pm - 4.00pm

MOOROOKA.....07 3848 0811

Shop E
182b Beaudesert Road

Opening Hours
Mon - Fri: 8.00am - 1.00pm

ORMEAU.....07 5549 0505

Ormeau Family Practice
Norfolk Village, Shop 5
180 Pascoe Road

Opening Hours
Mon - Fri: 7.00am - 12.00pm

TARINGA.....07 3121 4444

Westside Dermatology
191 Moggill Road

Opening Hours
Mon - Fri: 8.30am - 1.00pm
2.00pm - 5.00pm

Introducing Dr Vladimir Osipov

Dr Osipov completed his medical studies at the Pavlov Medical University, St Petersburg, Russia. This was followed by a pathology residency at the Medical College of Wisconsin and a Surgical Pathology Fellowship with special emphasis in bone and soft tissue pathology and gastrointestinal pathology at the Mayo Clinic, Minnesota, USA.

Prior to assuming his duty as Pathologist in Charge at Townsville QML Pathology, Dr Osipov worked as an Assistant Professor of Pathology at the Medical College of Wisconsin, USA followed by posts in private and public laboratories in Auckland, New Zealand.

Vladimir's speciality interest areas are:

- dermatopathology
- gastrointestinal and orthopaedic pathology.

Dr Osipov is a Fellow of the College of American Pathologists and of the Royal College of Pathologists of Australasia.

Phone: (07) 4795 6455

Fax: (07) 4779 0348

Email: DrVladimir.Osipov@qml.com.au



Introducing Dr Michelle Alizart

A recipient of the Griffith University Excellence Scholarship for Bachelor of Biomedical Science, Dr Michelle Alizart graduated in 1997 before working as a Scientist in the Endocrinology/Radioisotopes Department at QML Pathology's Central Laboratory for two years. From 2000-2001 Michelle conducted medical research into Gullian Bare Syndrome at the University of Queensland's Department of Medicine at the Royal Brisbane Hospital, before commencing medical training in 2002.

Michelle studied medicine at The University of Queensland and graduated with Honours in 2005 before progressing to an internship and Senior House Officer positions at The Gold Coast Hospital.

In 2008, Michelle commenced training as an Anatomical Pathologist at various institutions, including QML Pathology, the Princess Alexandra Hospital, Royal Brisbane Women's and Children Hospital and the Prince Charles Hospital, as well as completing a six month research posting at the University of Queensland Centre for Clinical Research, in Breast Pathology under Professor Lakhani. This has afforded Michelle exposure to a wide range of general surgical specimens, including gynaecological and non-gynaecological cytopathology.

Dr Alizart was awarded Fellowship in Anatomical Pathology and returned to QML Pathology in early 2013 as a specialist in histopathology and cytopathology. Her special interests include breast, gynaecological and gastrointestinal pathology, dermatopathology and cytopathology.

Phone: (07) 3121 4066

Email: DrMichelle.Alizart@qml.com.au



Doctor's Noticeboard



PEAK SPORTS AND SPINE CENTRE,

based in Brisbane, offers a wide range of health services ranging from physiotherapy, chiropractic, sports and remedial massage, to clinical Pilates, nutrition and yoga.

Our clinic is owner operated and our team consists of a skilled and talented group of professional physiotherapists and chiropractors. All have extensive experience in treating sporting and occupational injuries through a holistic approach. Whether it is rehabilitating patients from injury, improving strength and condition, or refining the patients' diet, we will work with the patient and yourselves to achieve the best result. We continue to keep the lines of communication open by sending doctors a detailed report of the patients' diagnosis and treatment plan.

We are open early in the morning till late in the evening, 6 days per week.

Please consult our website for further information and for a doctors referral pad please call the clinic.

A: Under Hawthorne Medical Centre
171 Riding Road. Hawthorne
P: (07) 3399 3318
W: peaksportsandspinecentre.com.au

MAJELLAN MEDICAL CENTRE

VR, GP required for Scarborough Beachfront, non-corporate practice, 30 minutes from Brisbane CBD.

Computerised (PS/MD), private billing, modern equipment, 8 doctors, RN support, accredited, established 30 years.

Computerised skin cancer clinic (Dermdoc), ultrasound machine and microscope. Allied health on-site.

P: (07) 3880 1444
F: (07) 3880 1067
W: www.redcliffdoctor.com.au

GP POSITION AVAILABLE IN BAYSIDE

We are a busy, modern, accredited GP owned practice in Cleveland. Our practice is computerised, fully equipped, has full-time RN and admin support, and offers mixed billing. Allied health and QML Pathology on-site. We offer flexible hours and a percentage of billing. Please email sheryl@clevelandcentralmedical.com.



DR. POOI LENG LEE

BA MB BCH BAO (Hons)
FRANZCOG

Dr Lee is an Obstetrician and Gynaecologist based in the southside of Brisbane. She has recently commenced her practice at the Sunnybank Private Hospital.

Dr Lee provides evidence-based best practice on a wide range of obstetrics and gynaecology services. She also has a special interest in minimal invasive gynaecological surgery and performs advanced laparoscopic (key-hole) surgeries for benign gynaecological conditions.

She is friendly, approachable and committed to providing quality and

personalised care for all women.

Although starting her own practice, Dr. Lee will continue to devote half her time at Logan public hospital, working as a staff specialist, teaching and training medical students as well as junior trainees.

As a doctor, Dr. Lee has a unique perspective coming from a multicultural background. Born and raised in Malaysia; she understands the needs of different cultures and she also communicates fluently in Mandarin and Cantonese.

A: Suite 101, Level 1, Times Square Building
250 McCullough Street, Sunnybank
P: (07) 3344 1440
F: (07) 3344 1961
E: info@ob-gyn.com.au
W: www.ob-gyn.com.au



DR STEPHEN ELGEY

is an Obstetrician and Gynaecologist providing services at Sunnybank Private Hospital.

Stephen has been providing advice and care to women in obstetrics, gynaecology and reproductive health for over 10 years. Locally trained and recently the Director of the O&G unit at Redland Hospital, Stephen offers the following to your patients:

- Minimal waits and 'no Gap fee' inpatient obstetrics
- Low/high risk care

- Early pregnancy & miscarriage management
- Mirena/IUD services
- Minimally invasive surgery
- Menstrual and pelvic pain management
- Pelvic floor prolapse and incontinence management
- Colposcopy.

For more information or to refer, please contact his rooms at Sunnybank.

A: Suite 101, Level 1, Times Square Building
250 McCullough Street, Sunnybank
P: (07) 3344 1440
F: (07) 3344 9461
E: stephen@lifecyclesobgyn.com.au



DR JO SCHOEMAN

FRACS FCS(Urol) MBChB

Dr Jo Schoeman is a General Urologist based at the recently opened Pelvic Medicine Centre, a new and unique venture at the St Andrew's War Memorial Hospital.

This centre is the first of its kind with an in-house combined effort of uro-gynaecology, urology and colo-rectal surgery in a joint approach to the debilitating effects of urinary and faecal incontinence in both men and women. This includes the work-up and management of all conditions affecting this, e.g., pelvic organ prolapse, the overactive bladder and stress Incontinence, etc.

Dr Schoeman achieved his FRACS Urology in 2008 after immigrating to Australia in 2007. He completed his FCS Urology in Pretoria, South Africa in 2003 and was in private and public general urology practice, prior to immigration.

Besides his interests in incontinence, Dr Schoeman offers a holistic general service in Urology. The option of Greenlight laser vaporization for benign prostate hyperplasia, has expanded his expertise in the male lower urinary tract.

Dr Schoeman maintains a passion for ureteric and renal calculi management, optimizing the combined use of up-to-date endoscopic equipment with laser technology. He is one of a handful of Urologists that offer a radical perineal prostatectomy for prostate cancer, as an alternative to standard procedure.

Give him a call or referral for any Urology advice. Patient well-being, satisfaction and best outcome is his top priority!

A: St Andrew's War Memorial Hospital
Pelvic Medicine Centre, Wickham Terrace
Spring Hill, Brisbane QLD 4001
P: (07) 3831 9049
(07) 3834 4399
M: 0403 044 072

*The Doctor's Noticeboard is a free service for practitioners to advise changes to their practice.
If you would like to place a notice, please email details to info@qml.com.au.*

Infectious Diseases Report

GEOGRAPHIC DISTRIBUTION - APRIL 2013

ORGANISM	Regions (as per key below)															TOTAL			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	APR	MAR	FEB	JAN
Adenovirus (not typed)	1		2				7		7	1	8	1		4		31	20	16	22
Adenovirus (typing pending)		1	1				2				3	2	1		2	12	15	19	10
Barmah Forest virus	7	16	4	4	3		19		15	8	21	37	3	5	17	159	142	42	26
Bordetella pertussis	5	14	3	2			4		16	2	22	6	2	3	3	82	119	142	122
Brucella species	1										2	2	1		1	7	2	3	5
Campylobacter jejuni																0	0	0	0
Chlamydia pneumoniae																0	0	0	0
Chlamydia trachomatis, not typed	68	136	33	23	5		101	1	78	27	150	44	19	38	20	743	707	588	496
Coxiella burnetii	3						1					2	1	1		8	4	3	5
Cryptococcus species			1								1	2				4	4	2	0
Cytomegalovirus (CMV)	2	10	1	8			11		12	2	16	5	2	1	1	71	84	64	68
Entamoeba histolytica																0	1	0	0
Enterovirus - not typed			1											1		2	0	0	0
Epstein-Barr virus (EBV)	6	26	10	9			39		17	6	29	13	5	10	5	175	206	154	141
Flavivirus unspecified	6	1		2			4		2	1	4	1	2	9	1	33	26	23	18
Hepatitis A virus			1								1	1				3	3	2	2
Hepatitis B virus	6	8	4	1			17		5	3	63	3	3	2		115	108	90	74
Hepatitis C virus	17	60	33	8	1		39		27	8	76	27	11	19	14	340	325	291	224
Hepatitis D virus																0	0	0	0
Hepatitis E virus																0	0	0	0
Herpes simplex Type 1	21	53	19	11	2		56		30	6	66	27	3	12	3	309	265	211	254
Herpes simplex Type 2	8	42	3	5			21		13	2	33	19	3	7	4	160	175	131	123
Herpes simplex virus - not typed																0	0	0	0
HIV-1	1		1				6		1		3					12	9	12	3
HTLV-1																0	0	0	0
Human Metapneumovirus	1	11	7	1			9		4	1	6	6	1	1	2	50	43	19	18
Influenza A virus	3	4	1	1			6	4	8	4	10	3	1	4	3	52	88	64	43
Influenza B virus	2	3					6		1		4	4			1	21	17	6	18
Legionella pneumophila (all serogroups)										1	2					3	0	1	1
Legionella species							2		3			1				6	5	3	4
Leptospira species	2		1							1						4	2	3	2
Measles virus																0	0	1	0
Mumps virus		1														1	1	0	0
Mycoplasma pneumoniae	12	76	50	15			96		79	25	159	77	20	10	21	640	606	452	422
Neisseria gonorrhoeae	7	17	3	1		1	9		2	1	8	2	1	4	2	58	48	41	40
Parainfluenza virus	1	6					3		4		13	3	2	1		33	32	10	29
Parvovirus							1				3			1		5	3	7	5
Pneumocystis carinii												2				2	1	1	0
Respiratory Syncytial virus	3	34	19	2			41		33	8	80	22	3	24	3	272	201	83	47
Rhinovirus (all types)	2	23	9	8	1	1	28		30	9	42	19	2	14	2	190	248	161	65
Rickettsia - Spotted Fever Group			1	1							3					5	4	0	1
Ross River virus	28	9	5	10			11		8	10	7	11	4	28	4	135	117	47	31
Rubella virus																0	0	0	1
Salmonella paratyphi A																0	0	0	0
Salmonella paratyphi B																0	0	0	0
Salmonella typhi										1		1				2	0	0	0
Streptococcus Group A	7	10	8	2		1	10		2	6	18	2	1	3	2	72	98	64	46
Toxoplasma gondii																0	2	2	2
Treponema pallidum	25	8	7	5	4	1	41		4	2	45	2	1	16	1	162	149	138	112
Trichomonas vaginalis	7		2		1				1	1	4			7		23	26	29	12
Varicella Zoster virus	16	36	17	3			32		38	7	47	23	2	9	5	235	222	193	150
Yersinia enterocolitica																0	1	0	0
TOTAL	268	605	247	122	17	4	622	5	440	143	949	370	94	234	117	4237	4129	3118	2642

REGIONS:

1 Cairns

2 Gold Coast/Northern Rivers

3 Ipswich

4 Mackay

5 Mount Isa

6 New England

7 North Brisbane Suburbs

8 Northern Territory

9 Redcliffe

10 Rockhampton

11 South Brisbane Suburbs

12 Sunshine Coast

13 Toowoomba

14 Townsville

15 Wide Bay/Burnett

FURTHER HISTORICAL CLINICAL DATA CAN BE OBTAINED BY CONTACTING MARKETING ON INFO@QML.COM.AU.