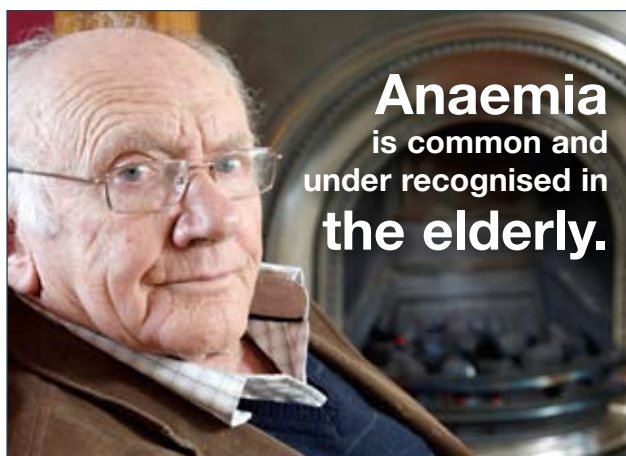


# QML PATHOLOGY

newsletter August 2010

## >> Anaemia in the Elderly

Dr Lydia Pitcher and Dr Erin Simleit, Consultant Haematologists



### Introduction

Due to increased life expectancy and falling birth rates, the number and proportion of elderly people (defined as age 65 years or more) in Australian society is increasing annually, as in most developed countries. This equates to almost 100,000 people per year, with the >85 year age group increasing at more than five times the total population growth. As our population ages there will be more patients of advanced years presenting for investigation and treatment.

The full blood count (FBC) is one of the most common tests performed, and with increasing age, the probability of identifying anaemia rises. The prevalence of anaemia in the elderly depends on the definitions used for elderly and anaemia. Using the WHO definition of anaemia (<120g/L in women and <130g/L in men), the reported prevalence varies from 8-21% for all persons over 65 years, rising to 44% in men over 85 years, and as high as 50% in nursing home patients. Not surprisingly, the increasing burden of anaemia in our elderly population has been termed “a public health crisis in haematology” and a “hidden epidemic”.

**Whilst anaemia is common in the elderly, it should not be considered a normal consequence of age.**

As such, anaemia is not the end point of diagnosis. A cause can be found in over 80% of patients, allowing rational, appropriate and effective therapy. A nutritional component is seen in up to 30% (see below). Often, the anaemia in this age group is an early clue to underlying systemic disease, requiring further clarification and management.

This article focuses on some of the pitfalls of detection, diagnosis and investigation of anaemia in those of advanced years.

### Epidemiology and Pathophysiology

- Analyses of normal populations in developed countries (NHANES III or National Health and Nutritional Examination Survey) show that anaemia in this age group is a vastly under recognised problem.
- As the prevalence of anaemia rises with age, its sex distribution changes, becoming more common in men after the age of 75 years. As such, although anaemia is more prevalent in women when considering all persons aged >65 years, its highest prevalence is found in men aged over 85 years (20-44%).
- It is more prevalent in disadvantaged groups and those in nursing homes or other long-term care facilities.
- A third of cases are due to chronic disease, a third due to bleeding or nutritional causes (iron, B12 or folate deficiency) and in the final third, the cause is indeterminate (see below).
- Anaemia due to unknown causes is more common in the very elderly (>85 years). Controversy exists whether this warrants a re-definition of haemoglobin reference ranges, as occurs at the other extreme of life (infants and children).

*continued >*

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The common perception that there is a 'physiological anaemia of ageing' may not be correct. Rather, an increased vulnerability to anaemia, and to co-morbidities that cause anaemia, may explain the high prevalence of anaemia in this age group. Specifically:

- Haemoglobin levels in 'healthy elderly' persons remain stable between the ages of 60 and 98 years.
- Haematopoietic reserve is reduced in the elderly, such that anaemia arises more easily with marrow stress. Contributing factors to this include:
  - o falling hormone levels  
(especially testosterone in males) - see below
  - o rising marrow inhibitory cytokines such as IL-6
  - o falling eGFR causing chronic disease-type changes
  - o decreased erythropoietin production
  - o a progressive fall in marrow cellularity
  - o an increased frequency of chromosomal aberrations in stem cells of the marrow associated with macrocytosis and myelodysplastic neoplasms (MDN).
- Falling testosterone levels and a progressively higher percentage of cells with 'loss of the Y chromosome' may explain the higher rate of anaemia in males older than 85 years.

### Clinical Significance

A slow downward drift in the haemoglobin level may be less apparent clinically in older people. **The usual clinical pointers of anaemia such as lethargy and weakness, may be less apparent in mobility-impaired patients, and/or incorrectly attributed to physical and mental deterioration due to the ageing process.**

The impact of anaemia on the quality of life of the elderly is very significant and compounded by other morbidities. Reduced tissue oxygenation results in problems of balance, co-ordination, appetite, mood, memory and concentration. Reduced cardiovascular fitness results in decreased physical performance and strength, and a higher rate of congestive heart failure.

Elderly patients with anaemia are more vulnerable, having higher rates of depression, accidents and falls; they are 40% more likely to have a problem that threatens their independence. They also have a shorter life expectancy, which, unlike quality of life parameters, is not necessarily improved by therapy.

**Table 1: Diagnostic approaches to Anaemia**

<b>Red Cell Production</b>	Normal/Hyper/Hypoplastic
<b>Red Cell Size</b>	Macro/Micro/Normocytic
<b>Underlying Etiology</b>	Chronic Disease/Nutritional and Bleeding/Other or Unknown

**Table 2: Causes of Anaemia in the elderly**

<b>Unknown (20 - 36%)</b>	
<b>Chronic Disease (15 - 30%)</b>	<b>Renal impairment (8%)</b> <b>Diabetes</b> <b>Auto-immune disease especially rheumatoid arthritis</b> <b>Chronic infection/non-immune inflammatory conditions</b> <b>Other endocrine failure (thyroid, sex-hormone, cortisol deficiencies)</b> <b>Malnutrition</b>
<b>Iron Deficiency (15 - 30%)</b>	<b>Bleeding (see also below):</b> <ul style="list-style-type: none"> <li>- Aspirin, NSAID</li> <li>- Ulceration</li> <li>- Colonic Ca</li> <li>- Angiodysplasia</li> <li>- Diverticulitis</li> <li>- Parasitic infestation.</li> </ul> <b>Haemolysis (immune/nonimmune including PNH)</b> <b>Nutritional</b> <b>Malabsorption</b>
<b>Bleeding (5 - 10%)</b>	(see iron deficiency) <b>surgical, dental, enteric, vaginal urinary tract, epistaxis</b>
<b>B12 Deficiency (5 - 22%)</b>	<b>Pernicious anaemia</b> <b>Dietary</b> <b>Malabsorptive Syndromes</b> <b>Drugs (e.g. Metformin)</b>
<b>Primary Marrow Disorders</b>	<b>Chronic leukaemia or lymphoma</b> <b>Myeloma</b> <b>Myelodysplasia</b> <b>Marrow infiltration</b>
<b>Less Common Causes</b>	<b>Folate Deficiency (2%)</b> <b>Haemolysis including:</b> <ul style="list-style-type: none"> <li>- immune haemolysis, traumatic cardiac valves, paroxysmal nocturnal haemoglobinuria</li> <li>- Hereditary, including haemoglobinopathies and hereditary spherocytosis.</li> </ul> <b>Trace element deficiency (zinc, magnesium, copper/ceruloplasmin, selenium)</b>

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### Diagnostic Approach to Anaemia in the Elderly (see summary table overleaf)

There is a diversity of approaches to the investigation and classification of anaemia in the elderly (Table 1).

#### 1. Request a 'film review'.

A request for 'film review', particularly in conjunction with relevant clinical details, will allow a more detailed appraisal and report of the blood film.

#### 2. Always consider the anaemia in the context of previous blood counts:

- **How rapidly has the Haemoglobin (Hb) fallen?**

A rapid fall in Hb suggests acute, brisk bleeding or haemolysis.

- **Has the Mean Cell Volume (MCV) changed?**

The MCV may give a clue to the diagnostic pathway:

#### Some Causes of Macrocytic Anaemia to Consider:

- B12/folate deficiency
- Reticulocytosis
- Hypothyroidism
- Alcohol +/- Hypersplenism and nutritional insufficiency
- Liver disease
- Primary marrow disorder e.g., Myelodysplasia
- Drugs

#### Some Causes of Microcytic Anaemia to Consider:

- Anaemia of Chronic Disease (ACD)
- Iron deficiency
- Thalassaemia
- Spherocytosis
- Fragmentation

- Factors that cause macrocytosis can mask the evolution of a microcytosis and vice versa.
- Dual pathology occurs commonly, particularly in the elderly.
- Absence of microcytosis does not exclude iron depletion.
- Absence of macrocytosis does not exclude B12 or folate depletion.

#### 3. Assess whether the reticulocyte response is appropriate.

A reticulocyte count can only be performed on a sample within 24 hours of collection. Therefore, it is best to order a reticulocyte count with the full blood count whenever anaemia is suspected.

#### 4. Request a Coombs test to exclude an immune component.

#### 5. Check whether other blood parameters are affected.

- The presence of other cytopenias warrants more urgent investigation.
- A high platelet count suggests reactive disease, bleeding and/or iron deficiency or a primary marrow disorder.

#### 6. Check for haematinic sufficiency (iron, vitamin B12 and red cell folate).

Iron and B12 deficiency are common in the elderly (See detailed discussion below). In Australia, folate deficiency is less common (approximately 2% prevalence in the elderly) than in the past due to the widespread use of supplements and fortification of foods.

#### 7. Consider clues from the clinical history, biochemistry and urinalysis.

- Review of acute phase reactants (CRP, ferritin, fibrinogen, globulins) and iron studies may help identify reactive causes.
- A high LDH may indicate haemolysis, B12 deficiency or lymphoproliferative disease.
- Check nutritional markers (total protein, albumin and haematinics).
- Check for thyroid and renal failure.

### Causes of Anaemia in the Elderly (see Table 2)

#### Unexplained Anaemia in the Elderly

This accounts for 20-36% of all cases. In studies of the elderly, this group includes patients where investigation is not undertaken, and those with mild unrecognised chronic conditions including renal impairment, and absolute or relative erythropoietin deficiency.

#### Beware the combination of Anaemia and Renal Failure

It is important to define the cause of renal failure in each patient and not to assume the anaemia is due to the renal failure. Always consider the possibility of Myeloma or Amyloidosis as a cause of anaemia and renal failure.

#### Anaemia due to Chronic Disease (15 - 30%)

Underlying causes in the elderly include chronic renal failure (CRF) (8%), and chronic disease (20%) including diabetes, auto-immune disease, particularly rheumatoid arthritis, other chronic inflammatory/infective causes, or both (CRF and ACD 4%), malnutrition and/or malignancy.

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### Nutritional Anaemias and Bleeding (20 - 50%)

In the elderly, iron deficiency anaemia is most often due to bleeding rather than dietary insufficiency or haemolysis. An elevated reticulocyte count can be a clue to bleeding, but this parameter can fall as iron stores become depleted.

One third of anaemia in the elderly can be traced to nutritional causes.

Anaemia in a patient on anti-coagulant therapy should not be overlooked or ignored. There is an increased risk of bleeding in these patients. Transfusion requirement is reduced and the outcome of a bleeding episode is improved if treatable anaemia is avoided in these patients.

#### Bleeding

Causes in the elderly include recent surgery (5-10%), enteral bleeding due to aspirin/non-steroidal anti-inflammatory drugs, ulceration, diverticulitis, angiodysplasia and malignancy, particularly colonic. Blood loss can be obvious (melena, PR bleeding, epistaxis, PV bleeding), however, the less obvious sources of blood loss include occult enteric and dental bleeding and haematuria (red cell loss from the urinary tract) as well as haemoglobinuria due to immune and non-immune haemolysis including paroxysmal nocturnal haemoglobinuria.

#### Iron Deficiency Anaemia (IDA)

In addition to bleeding and haemolysis, iron deficiency can reflect poor dietary intake, or malabsorption due to enteral pathology and parasitic infestation.

The diagnosis of iron deficiency in the elderly is complicated by the high prevalence of concomitant chronic disease. This complicates the interpretation of iron studies and serum ferritin. Whilst the 'gold standard' for diagnosis is a marrow biopsy, this can be avoided by first considering more sensitive and specific tests for iron deficiency. These include soluble transferrin receptor assay (STRa)\* and zinc protoporphyrin (ZPP)\* assay (see below). One of the earliest markers of iron deficiency is a reduction in reticulocyte haemoglobin, and tests for this are being currently developed, hopefully as a simple, cost-effective alternative to the above tests in future.

Early warning signs of emerging iron deficiency or 'iron insufficiency' before a drop in MCV or haemoglobin include:

- A drop in the total red cell count (RCC)
- A fall in the mean cell haemoglobin (MCH)
- An increase in the platelet count (due to rising erythropoietin levels and its homology with thrombopoietin)
- A rise in the percent binding capacity in the iron studies.

- STRa\* should be considered if iron studies are difficult to interpret in the setting of chronic disease. This is a non-rebatable 'send away test', that can identify iron deficiency where standard iron studies are not informative. STR levels rise with IDA.
- ZPP\* is useful in conjunction with STR. It also rises with IDA, but is more specific, and unlike STR, is not increased in red cell hyperplasia due to haemolysis, or thalassaemia trait.
- In general, in the absence of liver disease, it is unusual to have a ferritin higher than 50 mmol/L in the presence of iron deficiency. Conversely, a ferritin <50 mmol/L in the setting of chronic disease suggests IDA.

### Vitamin B12 Deficiency and Holo (Active) B12 Measurement

A relatively new assay for Vitamin B12, referred to as 'active B12' assay or HoloTC\* (Transcobalamin II bound B12) assay, measures only the bioavailable or active B12 in circulation. Results are thought to give a more accurate assessment of true B12 status. Low levels of HoloTC can occur in the setting of normal serum B12 levels and in up to 22% of the elderly.

- HoloB12 is more specific than serum B12, and is fully rebatable, unless serum B12 is also requested with the same collection. If concern is high, or previous serum B12 was low, HoloB12 should be requested.
- Traditional assays for serum B12 lose accuracy at the lower end of the normal range, making it difficult to be certain of B12 status as a cause for the clinical presentation.
- Supportive evidence for B12 deficiency can be sought by doing a homocysteine assay or testing for methylmalonic acid in serum or urine. Urine MMA is the most sensitive, but plasma homocysteine more accurately quantitatively reflects the degree of deficiency. Serum MMA is accurate but a more expensive test.
- In renal impairment (eGFR is <36 ml/min/m<sup>2</sup>), HoloB12 can be falsely normal and underestimate B12 deficiency. Conversely, homocysteine can be falsely elevated.

In the case of a confirmed Vitamin B12 deficiency, a cause needs to be documented. Consider reduced absorption due to:

- pernicious anaemia
- dietary (due to reduced meat intake)
- alcohol excess
- malabsorptive syndromes (including undiagnosed coeliac disease, Crohn's disease, post-surgical such as partial gastrectomy), parasitic disease
- Drugs (e.g., Metformin therapy).

Both serum B12 and holo B12 levels are reduced by Metformin therapy (due to reduced ileal absorption) and this increases with the duration of therapy.

\* Note: These tests may incur a non-rebatable fee.

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Establishing a diagnosis of Pernicious Anaemia can sometimes be problematic since the Schilling's test is no longer available. The laboratory tests that assist in confirming this diagnosis are:

- Serum intrinsic factor antibodies (high specificity but low sensitivity)
- Anti-parietal cell antibodies (high sensitivity but low specificity)
- Serum gastrin.

- Caution is required in interpretation of serum gastrin when patients are on proton pump inhibitors.
- A gastroenterology consultation +/- endoscopy may be indicated.

**Please refer to table overleaf >>**

### Primary Marrow Disorders

These include chronic leukaemia or lymphoma, myeloma, myelodysplasia and marrow infiltration, usually best assessed by marrow biopsy.

### Less Common Causes

These include paroxysmal nocturnal haemoglobinuria, haemolysis and trace element deficiency (see Table 2).

### Conclusions

Anaemia in the elderly has a greater impact on well-being than in younger adults, and is a growing problem in our ageing society. Its emergence should not be overlooked, or considered 'normal for ageing or their chronic disease', since a significant proportion (30-40%) will have a treatable cause, which is often nutritional or due to blood loss. Diagnostic tests for anaemia are improving; providing more sensitive and specific assessment to allow clinical intervention.

### Resources for Doctors and Patients

The National Anemia Action Council (NAAC) website provides a useful link with ready-to-print information handouts for patients and doctors, including 'Anemia and Aging', as well as a variety of other topics. (<http://www.anemia.org/patients/faq/>)

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**Dr Erin Simleit**

MBBCh M.Med (Haematology)  
FRCPA  
Consultant Haematologist

Ph: (07) 3121 4546  
Email: [erin.simleit@qml.com.au](mailto:erin.simleit@qml.com.au)

### Special Interests

Flow Cytometry and Haematological Morphology



**Dr Lydia Pitcher**

MBBS (Hons) BMedSc  
FRACP FRCPA  
Consultant Haematologist

Ph: (07) 3121 4066  
Email: [lydia.pitcher@qml.com.au](mailto:lydia.pitcher@qml.com.au)

### Special Interests

Haematological Morphology, Paediatric Haematology, Haemostasis, Thalassemia and Haemoglobinopathies



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**This is a guideline only and multiple pathology is common in the elderly.**

	Retic Count	Coombs Test	CRP/ESR	Ferritin	Erythropoietin	Possible Causes	Suggested Tests for Consideration
<b>Anaemia of chronic disease</b>	Low	Usually <b>negative</b> but positive if immune	May be elevated	<b>High</b> (Low serum Fe, <b>Low</b> TIBC, Low % saturation)	Inappropriately low	Renal failure Diabetes Cytokine dysregulation	E/LFTs, glucose, urinalysis (MCS, biochem) AutoAb screen Screen for infection TFT, Cortisol, Testosterone (males) Drugs review, CHO def transferrin (ETOH <sup>†</sup> )
<b>Iron deficiency Anaemia</b>	Low	Usually <b>negative</b> but positive if immune	If elevated interpret ferritin with caution	<b>Low or normal**</b> (Low serum Fe, <b>High</b> TIBC, Low % saturation)	High unless iron deficient myeloproliferative neoplasm	Bleeding Haemolysis (see below) Dietary def	Soluble Transferrin Receptor Assay <sup>††</sup> Zinc Protoporphyrin <sup>††</sup> Bleeding Ix (see below), Faeces O/C/P Haemolysis Ix (see below), Nutritional review, HoloB12, RCFolate Coeliac screen, PNH screen
<b>Bleeding</b>	High unless • Occult • IDA	Usually <b>negative</b>	Usually normal*	<b>Low</b> if IDA, otherwise variable	High	Post-surgical Anticoagulant therapy GIT, GUT, Urine, Epistaxis Cong/Acquired haemophilia	Iron studies, Bleeding Ix, Faecal Hb, Urinalysis Faeces O/C/P Gastroenterology/Gynae/Urology review Platelet count, Coag Profile, PFA-100, VWF studies, family Hx, review for telangiectasia
<b>Haemolysis</b>	High	Positive if immune	Usually normal*	Variable***	High	Immune Valve haemolysis PNH RBC defect Hb abnormality	Coombs test, Haptoglobin, AutoAb, LPD Ix Blood film review PNH screen E5MA, G-6PD Hb analysis <sup>†</sup> Iron studies, RBC folate
<b>Megaloblastic anaemia</b>	Usually low	Usually <b>negative</b> but positive if immune	Usually normal*	Normal or high***	Usually normal or high	Pernicious anaemia Dietary insufficiency Increased metabolic demand Drug induced (e.g., Metformin, Anticonvulsants)	HoloB12 <sup>†</sup> , RCF, Iron Studies (IS) Plasma homocysteine, MMA blood/urine <sup>†</sup> Anti GPC, Anti IF Ab, +/- Serum gastrin Coeliac screen, Faeces O/C/P Nutritional review, CHO def Transferrin <sup>†</sup> Gastroenterology review +/- Endoscopy
<b>Marrow infiltration</b>	+/- May be circulating normoblasts (leukoerythroblastic)	Usually <b>negative</b> but can be positive in LPD	May be elevated*	Usually high***	Usually high	Lymphoma Myeloma MDS, MPD, RAEB Non-haematopoietic malignancy	Cell surface marker analysis, LDH, Beta-2microglobulin, Paraprotein analysis, Urine/ serum FLC, Specific Ig levels FNA/Lymph node biopsy Marrow biopsy and cytogenetics Ca19.9, CEA, Ca 15.3, PSA
<b>Marrow aplasia/hypoplasia</b>	Very low	Usually negative but can be positive if immune	May be elevated*	Very high***	High	Ageing, Endocrine Infection, Drugs, Toxins, ETOH, Chemotherapy, MDS, Nutritional	Serial reticulocyte count, HoloB12 <sup>†</sup> , RCFolate, IS AutoAb, Drug review, PNH screen Virology screen (Hepatitis, Parvo, CMV, HIV) TFTs, Testosterone, Cortisol, CHO deficientTF <sup>†</sup> Marrow biopsy, Cytogenetics <sup>†</sup>
<b>Myelodysplasia</b>	Variable	Usually <b>negative</b> , can be positive (e.g., CMML)	Usually normal*	High to very high***	+/-	Ageing Infection, Drugs, Toxins, ETOH	Serial reticulocyte count, HoloB12 <sup>†</sup> , RCFolate, IS AutoAb, Drug review, PNH screen Virology screen, Trace elements TFTs, Testosterone, Cortisol, CHO deficientTF <sup>†</sup> Marrow biopsy, Cytogenetics <sup>†</sup>

\* CRP/ESR may be elevated in reactive disease and ESR may increase with significant anaemia.

\*\* Ferritin can be falsely normal or elevated in reactive disease and hepatic injury/inflammation when STR <sup>†</sup> and ZPP <sup>†</sup> are useful.

\*\*\* Ferritin may be lower than expected due to low iron stores/IDA. STR <sup>†</sup> and ZPP <sup>†</sup> may be useful.

<sup>†</sup> A non-rebatable fee may apply



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The Infectious Diseases Report - Geographic Distribution - July 2010  
is available via email: [info@qml.com.au](mailto:info@qml.com.au)

## Infectious Diseases Report - Geographic Distribution - July 2010

ORGANISM	Regions (as per key below)															Total			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Jul	Jun	May	Apr
Adenovirus (not typed)		3	1	1			3		2	2	7	2	2	1		24	20	13	9
Adenovirus (typing pending)		2	1				4			3	3					13	14	8	9
Barmah Forest virus	2	1							3	1		1				8	18	22	22
Bordetella pertussis	5	29	25	3	1		37		29	10	61	14	30	8	8	260	224	157	69
Brucella species											1					1	0	2	0
Campylobacter jejuni																0	0	0	0
Chlamydia pneumoniae																0	0	1	0
Chlamydia trachomatis, not typed	72	119	26	25	2	1	93		55	31	177	57	10	31	25	724	740	826	553
Coxiella burnetii		2	2	2					2		1		1	3		13	5	10	6
Cryptococcus species																0	2	8	4
Cytomegalovirus (CMV)	1	11	12				7		8	1	16	5	1	2	1	65	49	58	51
Entamoeba histolytica							1									1	0	0	1
Enterovirus - not typed											1					1	1	2	0
Epstein-Barr virus (EBV)	4	20	15	3			17		10	4	19	10	4	2	3	111	107	101	103
Flavivirus unspecified	5	1					2		2		2	1		3		16	17	15	12
Hepatitis A virus		1					1				2	2				6	3	5	5
Hepatitis B virus	7	4	3		1		10		1	2	55	2	2	3	1	91	85	80	71
Hepatitis C virus	12	45	30	7	2		46		25	5	72	23	7	13	13	300	307	260	209
Hepatitis D virus							2									2	0	0	0
Hepatitis E virus																0	1	0	0
Herpes simplex Type 1	12	40	20	4	2		37		23	9	64	20	12	7	5	255	227	270	191
Herpes simplex Type 2	17	23	3	2	1		14		10	3	48	12	2	9	2	146	184	149	153
Herpes simplex virus - not typed																0	0	0	0
HIV-1							2				2				1	5	10	8	8
HTLV-1																0	1	0	0
Influenza A virus		8	1				12		3	2	16	2		1	2	47	37	25	23
Influenza B virus									1	2						3	2	6	3
Legionella pneumophila (all serogroups)																0	0	0	0
Legionella species																			
Leptospira species	1		3											1		5	3	5	3
Measles virus																0	0	0	1
Mumps virus																0	0	0	0
Mycoplasma pneumoniae	1	4	3						3	3	7			1	1	23	17	29	12
Neisseria gonorrhoeae	7	4		1			6		7		14	1		1		41	55	45	47
Parainfluenza virus Type 1		1	1	1										1		4	2	3	3
Parainfluenza virus Type 2																0	5	3	0
Parainfluenza virus Type 3		1								1					1	3	2	0	1
Parvovirus	1	1	1				4		1	1	2	3	1	2		17	15	3	4
Pneumocystis carinii		3														3	2	1	2
Respiratory Syncytial virus		7	5			1	9		7	1	3		7			40	53	85	48
Rickettsia - Spotted Fever Group	4						2									6	4	1	2
Ross River virus	3	2	4			1	3		4	2	5	4	1	7	3	39	52	198	253
Rubella virus																0	0	0	0
Salmonella paratyphi A																0	0	0	0
Salmonella paratyphi B																0	0	0	0
Salmonella typhi																0	0	0	0
Shigella dysenteriae																0	0	0	0
Shigella flexneri																0	0	0	0
Streptococcus Group A	9	6	6				3		9	1	21	5	3		2	65	64	47	71
Toxoplasma gondii							2									2	4	1	1
Trponema pallidum	16	4	1	4	4		28		4	3	22	9	1	9	1	116	113	110	94
Trichomonas vaginalis	4					1	1				2			1		9	13	18	10
Varicella Zoster virus	8	29	7		2		26	1	25	4	60	16	3	8	9	198	182	164	160
Yersinia enterocolitica																0	0	0	0
TOTAL	191	381	170	53	15	4	372	1	234	91	684	189	87	114	78	2664	2643	2744	2214

### 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

# QML Pathology updates Aug 10

## >> Introducing Our New Pathologists



**Dr Jason Stone**  
**MBChB FRCPath**  
**Consultant Histopathologist**  
**and Cytopathologist**

After graduating with a Bachelor of Medicine and Bachelor of Surgery in 1997 from the University of Cape Town, South Africa, where he received multiple academic prizes, Dr Jason Stone continued his internship and Orthopaedics SHO at Greys Hospital Pietermaritzburg, South Africa.

In 2000, Dr Stone went to the UK and worked in the Department of Physiology and Histology at Bristol University. He commenced his histopathology training in Sheffield where he handled a wide range of general surgical specimens, including non-gynaecological cytopathology. Dr Stone joined Doncaster and Bassetlaw Hospital as a Consulting Pathologist in 2006, and in 2010 moved to Australia and joined the QML Pathology Brisbane histology and cytology team. His special interests include breast and gynaecological pathology, and cytology.

**Phone:** (07) 3121 4084  
**Email:** drjason.stone@qml.com.au



**Dr Karien Treurnicht**  
**MBChB FRCPath**  
**Anatomical Pathologist,**  
**Sunshine Coast**

Dr Karien Treurnicht graduated in 1995 with a Bachelor of Medicine and Bachelor of Surgery from the University of Pretoria, South Africa. In 1999, Dr Treurnicht relocated to the UK where she developed her skills and knowledge as a Specialist Registrar in Histopathology in various hospitals, before working as a Consultant in Histopathology and Cytopathology at the Northwick Park Hospital until late 2004.

After completing a fellowship in urological pathology in Richmond, Virginia, she accepted the position of Medical Director at the Bostwick Laboratories, London, where she worked until joining QML Pathology Sunshine Coast as an Anatomical Pathologist in 2010. Her special interests include urological, gastrointestinal and gynaecological pathology, and cytology.

**Phone:** (07) 5441 0211  
**Email:** karien.treurnicht@qml.com.au

## >> Allergy Information

Allergic disorders are very common in Australia with approximately 4.1 million Australians<sup>1</sup> having at least one allergy.

New to QML Pathology, and now available for all referrers, is a patient brochure on allergies. The brochure gives patients an overview of allergies in an easy to understand manner, and features information on common allergens, symptoms of an allergy, where to go for an allergy test, and information about fees and Medicare rebates.

In addition to the patient brochure, we have available the Allergy Testing Guide for doctors. The publication lists our extensive allergen and allergen mix menu, and provides a suggested practical approach for allergy diagnosis including allergen selection by clinical scenario.

If you would like copies of these brochures, please contact Marketing on (07) 3121 4506 or [info@qml.com.au](mailto:info@qml.com.au).

### References:

1. The Australasian Society of Clinical Immunology and Allergy, (2007). *The Economic Impact of Allergic Disease in Australia: Not To Be Sneezed At* [online]. Available: <http://www.allergy.org.au/content/view/327/274> [accessed June 2010]





## >> Doctor's Noticeboard

**Oxford Medical Suites** (16-18 Oxford St, Hyde Park) have a suite available for sessional use. For further information, please contact (07) 4721 2933.

### Introducing Dr Cathryn Edrich, Ophthalmologist, who joins The Vision Centre team.

Dr Edrich offers services for cataract, diabetic retinal disease and age-related macular degeneration in addition to acute and chronic general eye emergency conditions. Her special interests include the management of diabetic eye disorders and age-related macula degeneration, as well as cataract surgery, in which she has extensive experience.

In addition to private practice, Dr Edrich teaches and lectures medical students from Griffith and Bond Universities, and is an examiner for the Ophthalmology College (RANZCO).

### The Vision Centre, 91-95 Nerang Street, Southport

**Phone:** (07) 5528 4800 **Fax:** (07) 5528 4822

**Dr Lynda Spelman, Dermatologist**, has relocated her practice to Specialist Connect, Woolloongabba, as of 1 January 2010. Please forward all referrals and correspondence to Specialist Connect.

Dr Spelman is accepting referrals for routine conditions, as well as for urgent cases through Specialist Connect's Rapid Access Service:

### 68 Ipswich Road, Woolloongabba

**Phone:** (07) 3039 1300 **Fax:** (07) 3891 3815

**Email:** info@specialistconnect.com.au

**Website:** www.specialistconnect.com.au

For more information, contact Emma on (07) 3039 1300.

### WICKHAM TERRACE SURGICAL CENTRE Oral & Maxillofacial Surgery

Dr Barbara Woodhouse, Dr Mohammed Mansour, Dr Terence Alexander and Dr Anna Raymond are pleased to announce that they have extended their consulting to the Redlands district and Redcliffe peninsula. To make an appointment, please call (07) 3839 4717.

- **Brisbane** – 113 Wickham Terrace
- **Caboolture** – Caboolture Private Hospital, McKean St
- **Capalaba** – Suite 4, 76 Old Cleveland Rd
- **Logan** – Bryants Rd Specialist Centre, 70 Bryants Rd, Shailer Park
- **Redcliffe** – Peninsula Private Hospital, Cnr George & Florence Sts, Kippa-Ring
- **Strathpine** – Suite 2, Strathpine Specialist Centre, 32 Dixon St
- **Sunnybank** – Suite 10, Level 2, Sunnybank Private Hospital, 245 McCullough St



**Dr Philip Hall**, Fertility and IVF Specialist, has recently joined the team at Life Fertility Clinic in Spring Hill having relocated from Ballarat, Victoria. Philip brings with him 25 years of specialist experience in fertility management and assisted

reproductive technology with a special interest in age-related fertility issues and male factor infertility. Dr Philip Hall would be pleased to see patients you deem appropriate for fertility and reproductive management. Appointments can be made by phoning the Life Fertility Clinic on (07) 3606 3133.



**Dr Toby Cohen**, Vascular and Endovascular Surgeon, has recently started private practice in Brisbane, providing services in arterial surgery, venous surgery, renal access and hyperhydrosis surgery. His special interests lie in minimally invasive vascular

surgery: varicose veins surgery, Aortic Aneurysm Disease, and peripheral arterial disease.

Dr Cohen also has consulting rooms at Browns Plains, Noosa, Warwick and Holy Spirit Northside, and has a public appointment as a Visiting Medical Officer involved in the teaching and training of registrars and medical students at the Princess Alexandra Hospital.

Referrals can be made via:

### Athol Place Surgery, 303 Wickham Terrace, Brisbane

**Phone:** (07) 3839 7566 **Fax:** (07) 3832 6283

**Mob:** 0422 380 379

### Introducing Dr Aneel Nihal, Orthopaedic Surgeon with subspeciality in foot and ankle surgery.

Dr Nihal is a Visiting Medical Officer at the Gold Coast Hospital. In addition to consulting, Dr Nihal is an Associate Professor at the School of Medicine, Griffith University, Gold Coast Campus.

Dr Nihal's private rooms are located at the Lower Level, Benowa Garden Shopping Centre, Benowa, and he can be contacted via his Secretary Melinda on phone (07) 5564 6877 or fax (07) 5667 9595.

**Dr Michael Whitby** has resumed practice in consulting in infection at his Greenslopes rooms – Suite 16, Greenslopes Specialist Centre, Newdegate Street, Greenslopes. For further information, please phone (07) 3394 4788.

### Dr Nikki Whelan, Obstetrician and Gynaecologist

is pleased to announce the relocation of her practice to The Wesley Medical Centre, Suite 20, 2nd Floor, 40 Chasely St, Auchenflower 4066. Phone (07) 3161 5807, Fax (07) 3161 5901. Please refer all correspondence and referrals to this address.

# QML Pathology updates Aug 10

## >> BD SurePath™ Pap Test Comes to QML Pathology



QML Pathology has over 10 years experience with liquid-based cytology (LBC).



QML Pathology has published several studies of LBC and computer-assisted screening of LBC.



QML Pathology is the first laboratory in Queensland to introduce BD SurePath™ LBC technology and the BD FocalPoint™ GS Imaging System for computer-assisted screening for BD SurePath™ slides.



BD SurePath™ is FDA approved for cervical cytology.



Testing for HPV, Chlamydia and Gonorrhoea can be performed from the one BD SurePath™ vial.

### HOW TO USE

#### Step 1. Collect

Collect the cytology sample using either a broom-like device or combination brush/plastic spatula with detachable heads.

#### Step 2. Prepare

Prepare a conventional smear.

#### Step 3. Drop

Drop the detachable head device(s) into the BD SurePath™ vial.

#### Step 4. Send

Place the cap on the vial and tighten. Send **both** the BD SurePath™ vial and the conventional smear to QML Pathology for processing.



### INTRODUCTION

QML Pathology is pleased to offer the BD SurePath™ LBC system, as an adjunct to the conventional Pap smear.

Recent studies have shown that the BD SurePath™ provides the following advantages over conventional Pap smears, including:

- A cell enrichment preparation process, which reduces obscuring material such as blood or mucus on the slide, providing greater clarity for diagnosis
- Greater cell yield resulting in significantly fewer unsatisfactory cases and reducing unnecessary repeat testing
- A collection method that allows the laboratory access for repeat testing from the cell solution if required, providing more effective patient management
- Testing with the BD FocalPoint™ GS Imaging System, which with its superior algorithms, shows a significant increase in the detection of high grade abnormalities.

#### References

1. Desai M, Role of Automation In Cervical Cytology, *Diagnostic Histopathology* 2009, 15:7, p 323-329.
2. Freemont-Smith M, Marino J, Griffin B, Spencer L and Bollock D, Comparison of the SurePath™ liquid-based Papanicolaou Smear with the Conventional Papanicolaou Smear in a Multi-site Direct-to-Vial Study, *Cancer Cytopathology* 2004, 102:5, p269-279.
3. Kirschner B, Simonsen K and Junge J, Comparison of Conventional Papanicolaou smear and SurePath™ liquid-based cytology in the Copenhagen population screening programme for cervical cancer, *Cytopathology* 2006, vol 17, p187-194.

QML Pathology is pleased to offer  
BD SurePath™ liquid-based cytology  
at an affordable price of \$38.00.

### HOW TO ORDER

#### SurePath™ test

Write 'Pap smear + SurePath' or 'Pap smear + SP' on your request form.

#### SurePath™ vials, vial holders and collection kits

Order via the QML Pathology stores order form.

#### The 'Pap Smear and SurePath™ Tests' patient brochure, and additional scientific literature

Contact Marketing on (07) 3121 4506 or [info@qml.com.au](mailto:info@qml.com.au).

For further information or assistance, please contact Cytology on (07) 3121 4494 or speak with your local Medical Liaison Officer.

## >> Surgical Audit Category 1 CPD Points

Please be aware that the end of the RACGP 2007 - 2010 Triennium is approaching. If you would like your Surgical Audit individual ALM finalised, please contact Jo Wilson-Farr, CPD Coordinator, on **(07) 3121 4506** or email [jo.wilsonfarr@qml.com.au](mailto:jo.wilsonfarr@qml.com.au).



# QML Pathology updates Aug 10

## New Collection Centres

### Bellbowrie

Shop H2A, Bellbowrie Shopping Plaza  
37 Birkin Rd  
Phone: (07) 3432 9498  
Opening Hours (Mon–Fri):  
7.00am – 12.00pm, 12.30pm – 2.00pm

### Bundaberg

Southside Central Shopping Centre  
Olsen's Corner, 56 Walker St  
Phone: (07) 4153 2783  
Opening Hours (Mon–Fri):  
7.30am – 12.00pm, 12.30pm – 3.30pm

### Brisbane City

City Care Doctors  
Festival Towers, 108 Albert St  
Phone: (07) 3211 2164  
Opening Hours (Mon–Fri):  
8.00am – 1.00pm, 1.30pm – 4.00pm

### Childers

3 Ashby Lane  
Phone: (07) 4126 1603  
Opening Hours (Mon–Fri):  
7.30am – 12.00pm, 12.30pm – 3.00pm

### Clayfield

Shop 6A, Bonney Place  
318 Junction Rd  
Phone: (07) 3357 3254  
Opening Hours (Mon–Fri):  
7.30am – 12.30pm, 1.00pm – 3.30pm

### Cloncurry

Flinders Medical Centre, 27 Ramsay St  
Phone: (07) 4742 2391  
Opening Hours (Mon–Fri):  
8.30am – 12.30pm

### Forest Fair

Shop 5A, Forest Fair Shopping Centre  
Cnr Forest Lake Blvd & Woogaroo St  
Phone: (07) 3372 7542  
Opening Hours (Mon–Fri):  
8.00am – 12.00pm, 1.00pm – 4.30pm

### Fortitude Valley

Shop 32, Valley Metro Shopping Station  
230 Brunswick St  
Phone: (07) 3852 4325  
Opening Hours (Mon–Fri):  
7.30am – 12.30pm, 1.00pm – 3.30pm

### Lismore

Suite 5, Molesworth House, 186 Molesworth St  
Phone: (02) 6622 7567  
Opening Hours (Mon–Fri):  
7.30am – 12.00pm 1.00pm – 4.00pm

### Maroochydore

Suite 8, 35 Plaza Pde  
Phone: (07) 5479 3731  
Opening Hours (Mon–Fri):  
8.00am – 12.00pm

### Springwood

Shop 14, Cnr Chatswood & Magellan Rds  
Phone: (07) 3208 4849  
Opening Hours (Mon–Fri):  
7.00am – 5.00pm

### Toombul

Shop 125-126  
Toombul Centro Shopping Centre  
1015 Sandgate Rd  
Phone: (07) 3266 6702  
Opening Hours (Mon–Fri):  
8.00am – 1.00pm

### Toowoomba

Shop 5, Highfields Village Shopping Centre  
66 Highfields Rd  
Phone: (07) 4615 4810  
Opening Hours (Mon–Fri):  
7.30 – 12.00pm, 1.00pm – 3.30pm  
(Sat): 8.30am – 11.00am

### Walkerston

Shop 11, Walkerston Shopping Centre  
Peak Downs Hwy  
Phone: (07) 4959 3798  
Opening Hours (Mon–Fri):  
8.00am – 11.30am, 12.30am – 3.00pm

### Yandina

Unit 2, 18 Farrell St  
Phone: (07) 5472 7543  
Opening Hours (Mon–Fri):  
7.00am – 12.00pm

### Zillmere

Shop 8, 35 Handford Road  
Phone: (07) 3865 7976  
Opening Hours (Mon–Fri):  
7.00am – 12.30pm

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## Relocated

### Aspley

Shop 4, Aspley Fountain Shopping Centre  
1344 Gympie Rd (Cnr Albany Creek Rd)  
Phone: (07) 3263 1226  
Opening Hours (Mon–Fri):  
7.00am – 5.00pm  
(Sat): 7.00am – 11.00am

### Margate

Shop 6, 266 Oxley Ave  
Phone: (07) 3284 0114  
Opening Hours (Mon–Fri):  
7.30am – 12.30pm, 1.30pm – 4.00pm

## Coming Soon

### Beachmere

Shop 12, Beachmere Shopping Centre  
2-10 James St

### Caboolture

Shop 13, Central Lakes Shopping Centre  
Cnr Pettigrew & McKean Sts

### Clontarf

Shop 8, Clontarf Bayside Plaza  
9 Elizabeth Ave

### Innisfail

74 - 76 Edith St

### Mackay

Tenancy D, Courts Corner, 142 Nebo Rd

### Narangba

30 Main St

### Petrie

Shop 5, French's Forest Shopping Plaza  
Beeville Rd

### Sarina

33A Central St

### Taringa

Shop 101, Gailey Fiveways Shopping Centre  
Indooroopilly Rd

### Waterford West

Shop 5A, Waterford Village, 42 - 48 Bourke St

Please note: References for 'Liquid-Based Gynaecologic and Non-Gynaecologic Cytology' by Dr Bryan Knight (May 2010) are available upon request.