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The Diversity of Pathology

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About the Journal

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New Zealand Institute of Medical Laboratory Science

The Barrie Edwards and Rod Kennedy Scholarships

Applications are invited for these prestigious scholarships. These scholarships are some of the most significant awards from the New Zealand Institute of Medical Laboratory Science (NZIMLS). The two scholarships each year provides the winners support to attend an international or national scientific meeting to a maximum value of $7,500.

Applications are invited from Fellows, Members and Associate Members of the NZIMLS. Applicants must be a current financial member of the NZIMLS and have been a financial member for at least two concurrent years. Applicants must intend to present orally or a poster presentation as 1st author at their nominated scientific meeting.

Applications will be judged by a panel consisting of the President and Vice-President of the NZIMLS and the Editor of the *New Zealand Journal of Medical Laboratory Science* (who are ineligible to apply for the scholarships). The applications will be judged on your professional and academic abilities together with your active participation in the profession. Their decision is final and no correspondence will be entered into.

Application is by letter to be addressed to the Executive Officer of the NZIMLS, PO Box 505, Rangiora. There will be two scholarships awarded in each calendar year with **closing dates of June 30th and December 20th**.

In your application letter provide details of:

- Your full name, position and work address, email address and contact phone number
- How long you have been a financial member of the NZIMLS
- The conference you wish to attend complete with dates
- A budget comprising airfares, conference registration and accommodation costs
- The abstract of your intended oral or poster presentation and whether it has been accepted for presentation (proof required)
- Your intentions to publish your results
- State briefly what your active participation in the profession is and has been in the last 5 years
- State the reasons why you wish to attend your nominated scientific meeting

The successful applicants will be required to provide a full report on return which will be published in the Journal. If not intended to publish elsewhere, the successful applicants will be required to submit their study results for consideration by the *New Zealand Journal of Medical Laboratory Science*.

In this issue

Discrepancies of measurements for urine analytes using various methods have previously been described. In this issue of the journal Lu and Ding compared white and red cell counts and protein concentrations by an automated urine analyser (Urisys 1800), manual test strip reading, and microscopy. The Urisys 1800 gave higher values than manual strip readings for white and red cell counts and for protein quantity. No significant difference was detected for white cell counts between the Urisys 1800 and microscopic urinalysis, while red cell counts by microscopy were significantly greater than by the Urisys 1800.

Anaemia is one of the complications in both malaria and HIV infections. In this issue of the journal Akinbo and colleagues from Nigeria determined the prevalence of malaria and anaemia in HIV-infected persons. HIV infection was a risk factor for malaria infection and the prevalence of anaemia was significantly affected by HIV-infection. The authors conclude that HIV status should be considered early in the diagnostic evaluation of patients with suspected malaria and anaemia.

In an Editorial, the Editor discusses what happens when you submit an article to the journal. After checking for content and style, the article undergoes peer review. The peer review process is described thus providing potential authors further guidelines for improving their manuscript.

Another journal questionnaire is in this issue for members to potentially obtain 5 CPD points. Most questions require more than one answer, and in detail. In light of detection of a group effort in answering the questionnaire last year, it was dissapointing to discover another case this year. This is despite a statement in the journal and on the NZIMLS web site that in order to claim valid CPD points for successfully completing the journal questionnaire members must submit an individual entry. It must not be part of a consultative or group process.

Editorial:
What happens to your article at the Journal?

Rob Siebers, FNZIMLS, FNZIC, CBiol FBS, Editor
School of Medicine and Health Sciences, University of Otago, Wellington

The *New Zealand Journal of Medical Laboratory Science* has continuously published peer-reviewed articles relating to medical laboratory science since 1946, starting as the *Journal of the New Zealand Association of Bacteriologists*, renamed the *New Zealand Journal of Medical Laboratory Technology* in 1960, and finally to its current title in 1993. In his Editorial in the very 1st issue, the then Editor, Doug Whillans, wrote "*..a journal was a necessity as a means of keeping all the members of the Association acquainted with the dissemination of all knowledge thought to be of interest and use"* (1). Today, those sentiments still hold.

Most biomedical journals aim to accept and publish quality articles of relevance to its readers. They aim for new or novel findings, and well designed studies that advance knowledge in a particular scientific or medical field. The Institute's Journal aims for those ideals as well. Additionally, it is my belief, that articles in the Journal should, additionally, have an educational role. This can be either for in-depth review articles (far and few between), for technical articles describing new methodologies and techniques or major modifications to them, and especially case studies. Case studies are very educational for our members in that it brings together the laboratory tests with the patient's medical history and its role in guiding the physician in reaching the correct diagnosis. To many times I have attended SIG or the Institute's Annual Scientific Meeting where I have heard excellent presentations by our members delivered to a select few but not disseminated to a much wider audience of the Journal (current circulation about 2,000, including overseas). Only a very small percentage of New Zealand medical laboratory scientists submit articles to the Journal. From its peak times between 1967 to 1983 when between 17 to 27 papers were published per annum, the latest figures from 2008 show only 9 original articles accepted and published. The last in-depth review article published in the Journal was two years ago (2).

So what happens when you send your paper to the Journal? From informal discussions with potential authors, I suspect that the majority have no idea, or have misguided perceptions on what happens. Some have thought that the Editor looks at it and automatically publishes it in the Journal if it is a medical laboratory science related article. Others, aware that their paper would be peer-reviewed, have absolutely no idea of what the peer review process is. This Editorial will inform potential authors of the peer review process in order that they will consider what referees look for before they send their paper and try to anticipate any oversights in their article before submission.

When a paper arrives at the Journal, the Editor, in the 1st instance, decides whether it is related to medical laboratory science. It is then assessed for quality, relevance and style. In many instances the Editor will send the manuscript back to the author with suggestions and guidelines of what may need to be added or changed. Having passed this scrutiny, the manuscript is then sent out for external peer review. Potential reviewers with expertise in the manuscript's main subject area are contacted with the abstract and invited to review. Once a reviewer has accepted the invitation to peer review, the manuscript is sent, together with a list of instructions to reviewers. These instructions are listed below and it is advisable for any potential author to take these guidelines in consideration when writing up their paper.

Guidelines for reviewers for the *New Zealand Journal of Medical Laboratory Science*

- Identify and comment on the major strengths and weaknesses of the study design and the methodology
- Comment accurately and productively upon the quality of the author's interpretation of the data, including acknowledgement of its limitations
- Comment on the major strengths and weaknesses of the manuscript as a written communication, independent of the design, methodology, results, and interpretation of the study
- Provide the author with useful suggestions for improvement of the manuscript
- Ensure comments to the author are constructive and professional
- Comment on whether cited references are appropriate, and/or whether other references are more appropriate
- Provide the Editor with a comment whether the manuscript is:
    a. Acceptable for publication as is (extremely rare)
    b. Acceptable with minor modifications
    c. Acceptable with major modifications
    d. Unacceptable for publication (give explicit reasons)
    e. Do not give the above comments to the author

The identity of the reviewers is not revealed to the author. However, the reviewers do know the identity of the author. This single-blind review process is the most common one used by peer-reviewed biomedical journals. Double-blinding, as used by some journals, has not shown to have any particular advantage. As well as going out to at least two reviewers, the Journal's statistical adviser will separately comment on the appropriateness and interpretation of any statistics in the author's manuscript. When the reviewers reports come back, the Editor decides whether to reject the paper outright or to ask the author to revise in light of the reviewers and Editor's comments. If asked to revise, the author is asked to consider the reviewers comments and when resubmitting state how the author has addressed each of the points raised, and if disagreeing with any point, why.

Finally, the author, after one or more revisions, receives an E-mail from the Editor that his/her manuscript has been accepted for publication in the Journal. At this stage the author is also asked to assign copyright of the article to the NZIMLS, as owner of the Journal. The accepted manuscript is then normally published in the next issue of the Journal (we publish only three times per calendar year). Thus, as can be seen from the above process, the time for submission to finally appearing in print, can take some time.

As Editor for the last 15 years one of my biggest pleasures has been to guide authors in having their 1st or 2nd publication accepted for publication in the Journal. I look forward to helping future 1st time authors achieve this objective, so the next time you present at a SIG or scientific meeting, think further and consider submitting your paper to the Journal to reach a much wider audience than you achieved at that meeting. Finally, there are three golden rules for authors. Rule 1 is: read the Instructions to Authors. Rules 2 and 3 are: see Rule 1!

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2. Evans G. Review of molecular methods for medical microbiology testing. *N Z J Med Lab Sci* 2007; 61: 72-83.

TH Pullar Memorial Address: Back to the future - are we headed there?

Chris Kendrick, GradDipSci, MSc, MNZIMLS, Senior Lecturer
Massey University, Palmerston North

Firstly, I would like to thank the organisers of this year's Annual Scientific Meeting (ASM) and the Council of the New Zealand Institute of Medical Laboratory Science (NZIMLS) for considering me worthy of providing this year's TH Pullar address. I am indeed honoured to be able to deliver the address some 42 years after the first given by Dr. F W Gunz at the ASM in 1967.

The TH Pullar address honours the memory of Thomas Henry Pullar who passed away in August 1966. Dr Pullar was born in Auckland and travelled to Scotland with his family as a boy. He studied medicine at Glasgow and Sheffield universities and trained in pathology prior to his return to New Zealand in 1937. Dr Pullar took up a position at Palmerston North Hospital where he worked until he moved to Tauranga in 1963. Thomas Pullar was an advocate and friend of technologists and he worked to establish professional laboratory standards and set up training schemes for technologists in this country.

Having listened to a few of the TH Pullar addresses over the years I expected some inspiration might have rubbed off - well it hadn't. From the time I was asked to present this address I began wondering what I had to offer and what sort of commentary I could make to foot it with some of the heavyweights of the past. I commenced by thinking I could relate my experiences in a career that commenced with my sister Alison at Wanganui hospital as a trainee. I soon discounted that as an option as the time available wouldn't do the tale justice. I thought about presenting something on the NZIMLS and the wonderful experiences and people I've had the chance to work with over the years but no - I kept coming back to my passion. My talk today is on medical laboratory science (MLS) education and is entitled "Back to the future - are we headed there?"

The story starts with a return to the past when at the Association of Bacteriologists conference in Wellington in 1945, the profession first recorded that a university degree was the preferred entry qualification for staff to work in medical laboratories. It was also the desire at the time that a BSc should be the entry-level qualification. Education was the main driver for the formation of the Association of Bacteriologists, the founding body of today's NZ Institute of Medical Laboratory Science.

If you go way back into the history of the profession, the earliest records show that in 1920, Horace Holt was one of the first to gain the NZ Department of Health's "*Certificate of Proficiency in Bacteriological Technique*". By 1923 the qualification had changed to the "*Certificate of Proficiency in Bacteriology and Clinical Pathology*" and the first signs reflecting the expansion of clinical pathology past bacteriology. The syllabus of the day was the first to show the introduction of haematology with the requirement that trainees learn about the "Counting of red and white cells and the estimation of haemoglobin". These subjects nestled inconspicuously among the bacteriological topics of diphtheria, meningococci & TB.

In these the early days, the numbers of bacteriologists were few and programmes were based on an apprentice-style training programme spread over five-years. Teaching was provided by pathologists and a single general examination was held at the Medical School in Dunedin. This was a late add-on to medical student "specials" and consisted of written, practical and oral tests with success determined largely on the oral examination. This remained in place until after World War II when in 1946 the Department of Health released an improved syllabus for the "*Certificate of Proficiency in Bacteriology and Clinical Pathology*".

Shortly after the formation of the Association of Bacteriologists in 1945 there was a long overdue review of training and education for the profession. This resulted in the "*Certificate of Proficiency in Hospital Laboratory Practice*" which was offered for the first time in 1949 and signalled the professional body's first involvement in the examination process. Entry into the pathologist dominated domain was not straight forward and only occurred after agreement was reached with pathologists and the Department of Health. The revised programme retained the apprentice-style training over 5 years, but now included an Intermediate examination taken after three years. Training was restricted to Department of Health approved hospital laboratories and later extended to private laboratories. Supervision of the training was provided by senior hospital bacteriologists or pathologists. Those successful in the Intermediate examinations progressed to the final exams after a further two years of training. At this time an attempt was made to move the final two years of the qualification into the university system. History records this as the first failed attempt and training was retained within the hospital laboratory under the direction of a pathologist.

In response Doctors Pullar and Mercer soon developed a new syllabus for training which was not immediately acceptable to all. For the first ten years of the COP, examiners were always pathologists, however, from 1960 a senior bacteriologist was added for the first time to the panel of examiners. During this time two intermediate and two final examinations were held each year in Wellington. The system worked well for a time, but numbers eventually became too great to hold the examinations in one place.

In 1960, a joint committee of representatives from the newly formed Institute of Medical Laboratory Technology was set up to again revamp syllabi for the intermediate and final examinations. The complexity of laboratory work had increased and the syllabi for the COP were now outdated. The then Director of the Hospitals Division of the Ministry of Health chaired the Committee charged with providing a new syllabus. The committee which included Dr Thomas Pullar eventually evolved to become the Medical Laboratory Technologists' Board (MLTB) which was constituted by an Act of Parliament in 1964. With this the responsibility for examinations and certification shifted from the Department of Health to the MLTB. By 1964 examinations were being held in Auckland, Wellington and Dunedin with Dr Pullar the chief examiner.

In 1966, the intermediate syllabi and examinations were again upgraded as the MLTB moved to issue a general qualification called the "*Basic Training Certificate*". Practicals for the Basic Training Certificate were discarded and an examination consisting of three, 3 hour written examinations was introduced. Training was provided by senior technical staff and pathologists. In-house practical assignments had to be completed prior to the examination and these required sign off by the charge technologist. Ordinary or "O" levels and Advanced or "A" level examinations were now required at the end of the fourth and fifth years with options available from one of four "major subjects". Many pathologists and senior technologists were unhappy with the developing specialisation and were concerned how country hospital laboratories would continue to staff their labs with generalists. The essentially apprenticeship style training programmes were recognised by the MLTB with the issue of a "*Certificate of Attainment in Medical Laboratory*

Technology".

In June 1968, the now New Zealand Institute of Medical Laboratory Technology submitted its preferred options for the future training of medical technologists to the National Development Conference. The options they listed included:

- Technical Institutes
- Training schools - like pharmacy school
- University Diploma
- University Degree

This soon led to a move of the training to Technical Institutes and a new qualification called the "*New Zealand Certificate in Science (Paramedical Option)".* The move to a more professional educational system was generally seen as a good thing with the growing recognition that teaching was not necessarily a strength of technologists and pathologists. Day release and block course programmes meant that trainees could work and study while still retaining employment. The NZCS was followed by Part II and Part III level MLTB examinations. Training for these examinations was provided in-house by technologists and pathologists.

By 1982 the MLTB "*Certificate of Proficiency in MLT"* had become the "*Diploma in Medical Laboratory Technology"* with specialisation increasing to meet the expansion in the MLS disciplines. Part II examinations now became Certificate level examinations and Part III the Specialist level. The options for the Part I and Part II were:

- Clinical Biochemistry
- Cytogenetics
- Immunology
- Immunohaematology
- Haematology
- Histology
- Medical Cytology
- Microbiology
- Nuclear Medicine
- Virology

By the late 1980's, the MLTB wanted to relinquish its role as a provider of MLS examinations. In 1990 the Specialist level examinations moved to the NZIMLT, but Certificate level examinations remained with the Board. In 1987, logbooks finally replaced the Board's practical and oral examinations - a number present here will still remember those joyful moments in Palmerston North. In 1989 the NZCS (paramedical) option changed to become the "*National Diploma in Medical Laboratory Science*" (NDMLS) and continued to be offered by the polytechnics.

As far back as 1968, Massey University had shown interest in offering a university Diploma programme for the profession. A number of attempts during the late 1960's and another attempt in 1983 failed when the Hospital Board's Association refused to support university training stating that:

- Training was too specialised at senior level
- Automation reduced the need for high level analytical work by medical technologists
- International trends towards higher education were dismissed as inappropriate for the NZ health industry

By now the Institute was becoming used to the odd knock-back, however, it refused to abandon hopes for a degree course. Towards the latter part of the 1980's some NZ universities were moving to provide more vocationally orientated degree programmes and both Massey and Otago, through their Veterinary and Medical courses had well established teaching in the subjects of biochemistry, microbiology, virology and genetics. It was during this time the University of Otago became interested in including MLS with other Health Science programmes taught out of the Dunedin campus.

In 1991, applications from both Massey University and the University of Otago for the establishment of a Bachelor degree in MLS were approved by the Committee for University Academic Programmes. In 1992, the first students to enter the two new Bachelor degree programmes were enrolled at Otago and Massey Universities. Both programmes were based on three years of university study with one year of clinical training in a diagnostic lab. In 1994, the Auckland Institute of Technology gained approval to rename the NDMLS the Bachelor of Applied Science and a year later the Bachelor of Medical Laboratory Science commenced. The MLTB ceased offering Certificate level examinations in 1995. By this time examiners of the Board exams had been made up of mostly MLS with pathologist involvement less common.

Today

Since 1995, the path for MLS training in NZ has been through an MLSB approved university degree programme. Today the BMLSc programmes continue in much the same way as they started. The programmes produce graduates with a sound academic background in science, including most of the clinical sciences. Laboratory practical skills are taught partly throughout the university years, but mostly during the 4th year clinical placement. Opportunities for employment are good as compared to traditional BSc programmes, which is an attraction of the BMLSc programmes. Initially, acceptance of the graduates by non-degree trained scientists was slow, but over time this has improved. NZ universities currently produce between 60-70 BMLSc graduates yearly. Of these some go on to graduate studies and do not enter the profession. Others choose different career options, but the greatest number find employment and become registered MLS. Most of the graduates work for a few years to retire debt and eventually head offshore for their OE where they are highly valued, particularly in Australia and the UK.

In 1991, a needs analysis undertaken by the NZIMLS, found that 60-70 students a year were required for the profession. There has been no more recent investigation carried out into numbers of BMLSc graduates required for today's lab setting. Today most laboratories struggle to attract NZ trained MLS to fill positions in their labs. Some positions are filled by NZ graduates, but increasingly more are being filled by overseas trained scientists or with technicians. Today there is a growing trend towards the employment of BSc students as technicians. Many of these are eligible to enter the MLSB GradDipSci pathway to registration. Developed originally to provide a path to MLS registration for the few science graduates wanting to progress to MLS registration, this is now developing as a second path to registration, i.e. BMLSc and GradDipSci. The two programmes in my view produce different MLS graduates. The BMLSc graduate has a strong clinical science focus while the GradDipSci graduate will have a comparatively weaker clinical science focus. The numbers of GradDipSci MLS are growing steadily. This is something the profession should be concerned about and in my view is a threat to the BMLSc programmes.

The major limiting factor for the BMLSc programmes is the 4th year clinical placement. Taking more students into the BMLSc programmes to meet growing demand is not possible as ongoing sector restructuring over the last 10 years has impacted upon the ability of labs to commit to training of the 4th year students. Each year it is becoming increasingly more difficult to arrange the placements required for students to complete their BMLSc degree. History shows us how training programmes change to meet the needs of the profession. I think it is time the profession had a close look at what is happening at scientist entry to our profession and make some choices about what it wants for the future.

The identification of the MLS profession as a priority workforce by the Ministry of Health and District Health Board NZ (DHBNZ) in 2002 recognises a number of future staffing issues facing the profession. Demographics show an ageing laboratory workforce and fewer younger people seeking a career in the sciences. While the total numbers of MLS issued with an Annual Practising Certificate (APC) in 2009 has changed little over the past 5 years, shortages created with the retirement of the baby boomers in the next 10 years are expected to put laboratory services under increasing pressure. This, and an international shortage of laboratory professionals in other westernised countries, is also likely to worsen the situation in NZ as scientists and pathologists are attracted to better conditions offshore.

The issue of diagnostic pathology staff recruitment and retention

is a problem facing other countries. In the United Kingdom (UK) a development between the Institute of Biomedical Science, the Royal College of Pathologists and other professional bodies has created a new career structure called the Clinical Scientist (CS). The driver for the CS is the anticipated demand for highly trained diagnostic laboratory scientists for the future. The Clinical Scientists are expected to fill a niche in the National Health Service with career progression to consultant status for outstanding scientists in specialist disciplines. In the UK, the CS provides greater clinical liaison and performs some of the tasks traditionally performed by pathologists. The purpose of the CS is not to replace the pathologist, but to provide a higher level training pathway for some scientists to assist pathologists with the growing workload exacerbated by falling numbers. It is also hoped this move will provide pathologists with more time for greater patient involvement, clinical liaison, teaching and research.

In NZ there is the generally held notion that many bright young scientists leave the profession because of the lack of a satisfactory career structure in diagnostic pathology. Options for career development and promotion outside of the Human Resources/ Laboratory Management pathway are few. Most young people electing to study MLS do so with the expectation of a career in science, only to find that few opportunities exist to maintain their scientific interest. In NZ the promotion of scientists in the clinical laboratory is seldom based on their scientific ability. The current model promotes excellent scientists to become departmental heads/team leaders for a career in administration. They are involved mainly with personnel issues, consumables inventory, occupational safety, and accreditation compliance. Their involvement in testing, results verification, results interpretation, reporting, method development and evaluation is minimal. Under laboratory restructuring in NZ in the last decade, there has been a fall in the number of senior scientists in the industry. Today younger scientists, often lacking adequate laboratory experience, have to take earlier responsibility for key laboratory operations. In many laboratories there are few pathologists involved in the clinical pathology output and there are increasingly fewer senior scientific staff available for consultation.

In February 2007, the DHBNZ Scientific Workforce Strategy Group established a working party to investigate "Role extension" for MLS. The working party was comprised of representatives from DHB laboratories and included a pathologist. The group had the task of identifying DHB sector development for MLS that would be responsive to present and expected pathologist shortages in the sector. With the number of ageing pathologists and scientists in the workforce, future access to quality laboratory services could be affected. The working party commenced by surveying the MLS workforce and results showed support for role extension in NZ. The survey also showed that in many laboratories role extension was already standard practice, particularly in parts of the country lacking on-site pathologist staffing.

In March 2008, a "Think Tank" (TT) group was formed to further progress the concept of MLS role extension. The group comprised scientists from DHB laboratories, a DHBNZ representative, a DHB Human Resource representative, three NZ University Academics (Otago, Massey & AUT) and a MLSB representative. The TT initially lacked pathologist representation, however a request to the Royal College of Pathologist of Australasia (RCPA) subsequently provided two pathologists for the group.

Following several teleconference meetings the TT group gathered in July 2008. As part of the lead up to the meeting, a survey of staffing in NZ laboratories had been conducted. The findings supported the anecdotal notion that laboratories were experiencing difficulties employing and retaining scientists and pathologists. The survey showed many unfilled vacancies for both groups and the increasing trend for both MLS and pathologist positions to be filled by overseas trained people.

The meeting considered two proposals submitted for possible training programmes for CS positions in NZ. Following discussion a training concept was selected and forwarded initially to the NZ Pathologists Group and then on to the RCPA. The training programme was made up of two parts. Part I was comprised of PG University study and Part II included a period of "in-house" clinical training in a diagnostic laboratory in one of the MLS disciplines to an advanced level.

For CS Part I, students would enrol in an approved MSc programme to cover advanced study in one of the clinical sciences of haematology, microbiology, clinical biochemistry or transfusion science. Another compulsory paper would be the requirement to complete a clinically oriented research project. Other papers covering topics such as health sector management, epidemiology, applied statistics, informatics etc. would be required to make up the number of points for the conferment of the MSc. Study would be undertaken ideally in conjunction with employment in a clinical laboratory. Completion of the requirements of the MSc degree would normally take 3-4 years (part time study).

For CS Part II, there would be advanced study in one of the clinical science disciplines to the level of consultant scientist. Candidates who had completed Part I and possessed an advanced background in one of the clinical laboratory sciences could apply for CS Part II. Non-vocationally trained candidates with existing MSc or PhD qualifications may also be considered provided they had a substantial background in the clinical sciences and employment in a diagnostic laboratory. Mentoring for CS Part II would be provided by pathologists and senior scientists and would run over 3-4 years. In the final year, trainees would undertake MRCPath (for scientists - category currently not available) or professional examinations offered by other providers, recognised as suitable for RCPA (scientist) membership. The number of training positions for CS Part II would be restricted to meet demand and resourcing across several areas of clinical pathology. The subjects of haematology, microbiology, clinical biochemistry and transfusion science would be targeted firstly with inclusion of other specialties following with additional consideration and consultation.

The move in the UK to develop the CS positions has been driven by similar issues facing the laboratory sector here in NZ. The introduction of a higher programme of training for scientists in our country would benefit the health sector by attracting students into the profession and retaining young scientists in the system. There is a growing need for more highly trained scientists in the clinical laboratory to apply the disciplines of molecular diagnostics, and the future sciences of pharmacogenomics and bioinformatics.

The ability of the clinical laboratory to continue to meet the future needs of New Zealanders lies in the hands of pathologists, scientists and technicians. Pathologist numbers look set to continue to decline over the next decade and it will be laboratory scientists who will be required to fill the gaps. To ensure the continuation of a high quality pathology service, the industry needs to take the training of MLS to a higher level. Moves already underway in other parts of the world to address similar issues to those expected in NZ look to be the way forward. The CS proposal I believe provides the opportunity for the profession to keep and retain its best and brightest graduates through an improved career pathway. This would in turn attract more interest in MLS as a career and would produce scientists better equipped to meet the future demands of the diagnostic laboratory.

The CS programme needs the support of pathologists and the RCPA. Our profession's history records how pathologists and scientists have co-operated in the past to provide the best possible laboratory service for patients. It was therefore pleasing to receive earlier this year, a positive response from the RCPA to the TT proposal for CS training in NZ. In the letter the RCPA Council agreed to discuss the implementation of such a system.

The next stage involves a round table discussion between both parties and this is scheduled to happen later this year. It is too early yet to say whether CS training will proceed here in NZ, however a start has been made and currently there is a mood for this to happen. Obviously there is still some distance to go with this yet, but if Dr Thomas Pullar was alive today, I'm sure he would approve of the proposal, and in particular its "back to the future" approach.

Evaluating the consistency of urinalysis results from the Urisys 1800 and microscopy

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Abstract
Objectives: Discrepancies of measurements for urine analytes using various methods have previously been described. Due to its importance as an indication of pathological conditions, the reliability of results are questioned. The aim of this study was to determine whether differences observed were statistically significant and to discuss the common factors involved that could potentially explain the discrepancies in order to assist clinicians to make a diagnosis.
Method: Urine samples (n=197) were tested by three methods: Urisys 1800 (Roche Diagnostics), manual reading of the test strip and by microscopy. Three of the most clinically significant analytes (red cell count, white cell count and protein quantity) were compared by applying the 95% confidence interval.
Results: We were 95% confident that the Urisys 1800 gave higher values than manual strip readings, relating to white cell, red cell and protein quantity. No significant difference was detected for white cell counts based on paired data obtained from Urisys 1800 and microscopic urinalysis, while red cell counts by microscopy were significantly greater than by the Urisys 1800.
Conclusion: Based on the principles of different testing procedures, cell lysis and interferences from other urinary components and substances may contribute to the discrepancies observed. In combination with individual patient's clinical details, it is possible for laboratory staff to advise clinicians with a better interpretation of the urinalysis results.
Key words: Urisys 1800, microscopic analysis, white cell count, red cell count, protein quantity.
N Z J Med Lab Sci 2009;63:75-77

Introduction
The Urisys 1800 (Roche Diagnostics) is a sensitive and specific analyzer for urinalysis, measuring various urine analytes semi-quantitatively, including specific gravity, pH, leukocytes, nitrite, protein, glucose, ketones, urobilinogen, bilirubin and blood (1). It is commonly referred to as "urine dipstick" and the procedures are simple and quick.

It is known that changes in body physiological conditions during disease states may lead to relevant alterations of the urinary components. By monitoring those by urinalysis an indication of disease conditions is possible and further clinical tests can be followed up. For instance, an elevation of urine glucose and/or ketones could be a sign of diabetes mellitus; while an increase in the leukocyte count and nitrite may suggest a urinary tract infection (UTI) or a kidney disorder (2).

Test strips are the media containing pads embadded with specific reagents and the amount of an analyte in the sample is proportional to the colour intensity developed on the pad via chemical reactions (2). The concentration value is then converted from the electro-optical measurement obtained by a detector. Each measurement is adjusted in comparison to a reference strip and the intrinsic colouration of the urine is taken into account to increase accuracy of the results (1). However, test strips can also be read manually.

In clinical laboratories, microscopic analysis is conducted either on urine samples with at least one significantly abnormal analyte value from dipstick or basically on all urine specimens. White cell count and red cell counts are directly estimated in the counting chamber. However, it has been previously shown that results obtained by microscopy do not always agree with those from the Urisys 1800. The aim of this study was to compare the accuracy of the Urisys 1800 to those of manual strip reading and microscopic examination.

Materials and methods
The data were collected in September 2007 in Southland Hospital laboratory, which consisted of urine samples from both inpatients and outpatients. The main type of specimens were mid-stream urine and clean catch urine samples. Each specimen had relevant information recorded, including gender and age of the patient, time elapsed till its analysis. Significant clinical details were also noted, mainly pregnancy and UTI. The analyzer used was a Urisys 1800 with Combur[10] Test® M test strips (lot number: 11379208) and microscopic analysis was performed on an Olympus BX40CY microscope. Two liquichek™ urinalysis controls (lot number: 61281 and 61282) were run daily on the Urisys 1800 before batches of patient samples.

Preferrably, urinalysis was performed within 2 hours of collection, in cases where an immediate urinalysis was not possible, samples were refrigerated at 2-8°C for up to 24 hours, according to the guidelines of sample collection and transportation (3). Refrigerated urine samples were returned to room temperature before analysis and direct exposure to sunlight and additional preservatives was avoided. After a thorough mix of the urine, a test strip was dipped completely into the sample and placed onto the test strip tray of Urisys (1). The same procedure was repeated but the strip was read manually by referring to the scales on the strip container based on the colour intensity developed. White cell count was read between 60s and 120s while all other analytes were read immediately after 1 minute. Importantly, any colour development along the edges of a pad only was regarded as negative, which occured frequently for protein in this study. For both automatic and manual testings, only white cell, red cell and protein results were recorded.

Each sample was then loaded onto a counting chambe for a

microscopic examination of white cell and red cell counts. The whole area was counted under ×40 magnification when the cell number wass low, whilst only a representative central square was counted and multiplied by a common factor of 10 if the count wass relatively high (4). All three methods were performed by the 1st author to reduce potential inter-personal bias. Results are presented as the number of cells per µl for white cells and red cells, and g/l for protein (1).

As we noticed that the assigned concentration intervals of both white cell and red cell for microscopic measurements differed from the ones from Urisys 1800 and the manual strip reading, paired comparison method were applied for analysis (6). Five sets of paired data of either automatic vs manual or automatic vs microscopy for a particular analyte were set up, and the mid-point value of each concentration interval was selected for calculation (5). For each set, a two-tailed 95% confidence interval (CI) of the difference was calculated (5).

Results

The total number of urine samples processed in this study was 221. Among those, 19 did not have collection time stated, four were analyzed after 24 hours and one showed severe haematuria thus rendering microscopic analysis impossible. Other mild or moderate blood-stained urines were not excluded as they are constantly encountered at clinical settings. Therefore, the final sample size was 197 and 68% of them were from female patients. The age of the patients ranged from 1 month to 99 years old with an average age of 53.7 years.

Eight sets of data collected from control level 1 were very precise for all three analytes of interest; however, one set of white cell count and protein quantity from control 2 were quite different from the rest. Tables 1 and 2 below demonstrate the 95% CIs for all five sets of data and the large standard deviation is indicative of the wide spread of data. Readings from the Urisys 1800 are significantly higher than manual strip readings. As shown in Table 2, there is no evidence to support that white cell counts from the Urisys 1800 are different from microscopic analysis. However, there is evidence that the red cell count by microscopy is indicative of elevated results.

Table 1. Urisys 1800 vs manual readings

	Mean of difference	Standard deviation of difference	Standard error of difference	95% confidence interval
WBC	8.89	53.34	3.80	1.44 to 16.34
RBC	14.63	22.25	1.585	11.52 to 37.21
Protein	0.051	0.16	0.0114	0.029 to 0.107

Table 2. Urisys 1800 vs microscopy

	Mean of difference	Standard deviation of difference	Standard error of difference	95% confidence interval
WBC	-9.58	78.93	5.62	-20.6 to 1.44
RBC	-14.20	63.62	4.53	-23.08 to -5.32

Since a significant difference was found when performing statistical analysis on red cell count data from the Urisys 1800 and microscopic urinalysis, Table 3 assists in the interpretation of the discrepancy. Urine samples with an Urisys 1800 reading of 150-250 cells/µl have a whole spectrum of interval readings from microscopy analysis. Also, there are 19 specimens which tested negative by the Urisys 1800 but harvested a cell count range of 0-10 cells/µl. However, approximately 60% of all the samples have given similar results by both methods.

Table 3. Comparison of RBC data by Urisys 1800 and microscopy

RBC	Microscopy readings				
		Negative	0-10	10-100	>100
urisys readings	Negative	47	19	0	0
	0-10	14	24	5	0
	10-25	0	13	8	0
	25-50	3	7	9	1
	50-150	0	1	3	4
	150-250	1	3	4	31

Discussion

The control level 2 contains higher concentrations of all analytes than the control level 1, and the control level 2 is more sensitive to storage condition and testing procedures which could result in false measurements if performed inadequately. For example: insufficient mixing of control material before analysis, gradual deterioration of components during long storage duration, control material not refrigerated promptly after analysis, etc. The day-to-day variation of control 2 readings had been noticed by laboratory stuff before this study and a change of the storage condition for control material has subsequently been applied. Smaller aliquots of each control that is sufficient for a single analysis were prepared, capped and stored at 2-8°C. Each aliquot is used once only and discarded afterwards. The random variation was then noticed less frequently.

The higher concentration readings for white cell, red cell and protein by the Urisys 1800, compared with manual readings, may be related to the principle of measurement. A testing pad with a colour intensity developed that is slightly darker than a reference scale is classified into the same concentration range as the reference scale by manual readings (1,2). However, the Urisys 1800 analyzer categorises it into the next darker scale, resulting in a higher concentration interval (2). Thus, the Urisys 1800 tends to give greater values overall, regardless of the types of analytes. Additionally, manual reading of a test strip is relatively subjective and inter-personal variation can be large. Moreover, another common problem encountered, especially by manual strip reading, is the colouration of urine samples. Blood-stained specimens can be caused by bladder and/or kidney conditions, while abnormally coloured urine may be a result of liver disease, or intake of certain medications or foods (9). All those render it difficult to provide an accurate manual reading as the reaction pads are stained by the intrinsic colour of the urine and the true intensity is obscured (1). In contrast, the effect of urine colouration is minimised via comparison to a reference strip during automatic analysis by the Urisys 1800 (1).

White cell counts measured by the Urisys 1800 are directly proportional to the amount of esterase present in the urine, which means both intact and lysed white cells are counted (2). Several factors are found to potentially influence its measurement. False negative white cell concentration may occur due to the presence of leukocyte esterase inhibitors (2,10). Glycosuria and/or ketonuria can result in falsely low measurements which could be an issue when analysing specimens collected from diabetic patients and other supplementary tests may be required to exclude suspected medical conditions (9). High urine protein and usage of certain oxidizing drugs may also lead to a false negative white cell count (9). As we have found in study, four urine samples with significant proteinuria had much lower white cell counts by dipsticks than by microscopy. On the other hand, false positive white cell counts are

usually caused by contamination, usually indicated by the presence of high numbers of epithelial cells and a repeat specimen may thus be necessary (9). In microscopic examinations, only intact white cells are counted and we would expect to have a lower white cell count from microscopy than the dipstick method. However, no significant statistical differences were found and a combination of several interference factors, as mentioned above, might have been involved in our study. As adopted from the Urisys 1800 performance evaluation report, false negatives were seen infrequently from the Urisys 1800 (7).

Similar to the white cell count, besides intact cells, lysed red cells are also taken into account by the Urisys 1800 dipstick analysis (2, 7). A colour-producing oxidation is catalysed by haemoglobin released from red cells and also by myoglobin that may be contained in the specimen (2). Thus, red cell counts may be falsely high if patients have myoglobinuria (9). Falsely positive or elevated measurements from the Urisys 1800 may also be due to the presence of oxidizing agents, haptoglobin and bacterial peroxidise in the urine , as well as the acidic property of the urine sample (pH<5.1) (2,7,9). The inhibitory effect from ascorbic acid (vitamin C) is minimized by the incorporation of iodate in the test region on the test strips (2). Proteinuria was found by other studies to confer a false negative red cell count though this was not observed in our study (9). Interestingly, the red cell count by microscopy conferred statistically higher readings, although only intact red cells are counted. Several possible causes might be relevant; when fatty granules of variable sizes and/or yeast cells that resemble small and oval red cells are seen under microscope, the differentiation may not be easy, resulting in inaccurate red cell counts. Over-estimation may partially explain us observing 19 urine samples showing 0-10 cells/µl by microscopy that were negative by the Urisys 1800 (Table 3). Furthermore, gradual occurrence of red cell lysis was observed on samples with a high concentration of 150-250 cells/µl by the Urisys 1800, which is evidenced by a whole range of concentrations found by microscopy.

The Urisys 1800 analyser has been widely applied in clinical settings. When a discrepancy of the analytes between different testing methods is noticed, further information from the clinicians is essential. The possible presence of interfering substances due to either medications or existing conditions of the patient can be relevant to differentiate the reliability of test results, in order to assist clinicians in reaching a diagnosis or monitoring treatment.
A limitation of our study is that the sample size might need to be larger and include samples from random community patients to ensure a better interpretation of the entire population with minimal bias. Urinary white cells and red cells only remain stable for up to 4 hours at refrigerated condition, which indicates a possible occurrence of continuous concentration alteration during urinalysis for a proportion of samples in our study (2). Moreover, a low specific gravity and/or an alkaline pH can speed up cellular lysis, which, unfortunately, was not investigated in this study (2, 10).

In conclusion, automatic urinalysis and microscopic examination of clinical urine specimens are the major techniques used in medical laboratories for measuring urine analytes that may be disease associated. The potential inconsistencies of the results obtained were tested in our study. Although no significant differences were found for white cell counts between the methods, microscopy gave higher red cell counts than the Urisys 1800. Gradual cell lysis and the involvement of interference factors are considered as the main contributors to the difference observed. Further studies on similar fields are fundamental to ensure the reliable determinations of urinary analytes.

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Prevalence of malaria and anaemia among HIV-infected patients in Benin City, Nigeria

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Abstract

Objective: To determine the prevalence of malaria and anaemia in HIV-infected persons and the effect of age, gender and $CD4^+$T cell counts thereon.

Methods: Blood samples were collected from 491 patients (240 female) attending an out patient clinic. Malaria parasitaemia was diagnosed by microscopy while anaemia was defined as haemoglobin concentration <130g/L in males and <120g/L in females. The $CD4^+$T cell count was estimated by flow cytometry.

Results: HIV infection was a risk factor for malaria infection (OR: 16.31; 95% CI: 7.41-35.87; p < 0.0001). $CD4^+$T cell counts was equally a significant risk factor in malaria infection among HIV-infected patients (OR: 1.96; 95% CI: 1.28-3.02; p = 0.002). The prevalence of anaemia was significantly affected by HIV-infection (OR: 25.12; 95% CI: 11.42-55.28; p < 0.0001) while age was not associated with increased risk of malaria infection (p=0.13).

Conclusions: A prevalence of 46.0% of malaria infection among HIV-infected was observed. HIV-infected patients were more likely to develop malaria and anaemia, while $CD4^+$T cell counts < 200cells/μL was associated with an increased risk of malaria infection among HIV-infected. Age and gender did not affect the prevalence of malaria. HIV status should be considered early in the diagnostic evaluation of patients with suspected malaria and anaemia.

Key words: HIV, malaria, anaemia, Nigeria
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Introduction

More than 40 million people are living with HIV/AIDS while the majority (more than 25 million) are in sub-Saharan Africa and up to 2.4 million deaths were recorded in 2005 (1). Each year 500 million infections and up to 2.7 million deaths are attributable to malaria (2). Malaria and HIV are among the two most important global health problems of our time, together they cause more than 4 million deaths per year. Malaria and HIV/AIDS are both diseases and causes of poverty and they share determinants of vulnerability (3). Both diseases kill millions of people each year and both are scourges of developing nations in Africa, India, Southeast Asia and South America (4). Since HIV- infection interferes with cellular immune function, protection against malaria depends on cellular immunity, which may be impaired in HIV-infected persons with low $CD4^+$ T cell counts (5).

Anaemia is one of the complications in both malaria and HIV infections and contributes to its morbidity and mortality (6). Previous studies have revealed malaria as fueling the spread of HIV in sub-Saharan Africa, while HIV is been implicated as playing a role in boosting adult malaria infection rates (7). This has not been well studied in this locality, therefore we determined the prevalence of malaria and anaemia in HIV-infected persons as well as the effect of age, gender and $CD4^+$ T cell counts thereon.

Methods

Study population

The study was conducted in the University of Benin Teaching Hospital (a tertiary hospital with a referral status), Benin City, Edo State, Nigeria, between March 2008 and March 2009. A total of 350 HIV-infected and 141 HIV non-infected patients as controls (251 males and 240 females) were studied. Age of study subjects ranged from 20 to 70 years (mean: 34.3 ± 9. 4 years). All enrolled subjects were out patients that were on their first hospital visit before commencement of HAART therapy. Verbal informed consent was obtained from each subject before specimen collection. The study was approved by the Ethical Committee of the University of Benin Teaching Hospital.

Specimen collection and processing

About four to five milliliters of blood was obtained from each patient, dispensed into ethylene diamine tetra-acetic acid (EDTA) container and mixed. Malaria was diagnosed by examination of a stained thick blood film. Thick blood films were made from each blood sample and allowed to air-dry. Slides were stained in 3% Giemsa stain for 30 minutes, rinsed in tap-water and allowed to air-dry. The stained films were examined for malaria parasites by microscopy using a x100 oil immersion objective lens. A total of 200 fields per film were examined (8).

Haemoglobin estimation was determined using a Sysmex KX – 21 haematology analyzer (Sysmex Corporation, Kobe, Japan). Anaemia was defined as a haemoglobin concentration less than 130 g/L in males and 120 g/L in females (9). A $CD4^+$T cell count was analyzed using flow cytometry (Partec, Gmbh, Germany). Briefly, into a Partec test tube 20μl CD4 PE antibody and 20 μl of well mixed whole EDTA blood were added, mixed gently and incubated in the dark for 15 minutes at room temperature. This mixture was mixed during incubation every 5 minutes. Eight hundred μl of CD4 buffer was added to the mixture of antibody and sample and mixed gently and $CD4^+$T cells counted.

Statistical analysis

Data were analyzed using chi square (X^2) test or Fisher's exact test as appropriate and odd ratio analysis, using the statistical software INSTAT®.

5

Results

A total of 168 (34.2%) out of 491 patients had malaria, while 161 (46.0%) out of 350 HIV-infected patients had malaria and 7 (4.97%) out of 141 HIV non-infected patients had malaria. Generally, HIV-infection was a significant risk factor for malaria (OR: 16.31; 95% CI: 7.41-35.87;p<0.0001) (Table 1). The prevalence of malaria was not significantly affected by gender (OR: 0.70; 95% CI: 0.46-1.07;

p = 0.097) (Table 1). $CD4^+$ T cell count was a significant risk factor for malaria infection among HIV-infected patients (OR: 1.96; 95% CI: 1.28-3.02; p = 0.002) (Table 2). The prevalence of anaemia was significantly affected by HIV infection (OR: 25.12; 95% CI: 11.42-55.28; p < 0.0001) (Table 2).

Increasing age was not associated with increased risk of malaria infection (p = 0.13). Although females had a higher prevalence of malaria than males, this was not statistically significant (p=0.097). Age was a significant risk factor for development of anaemia in HIV-infected patients (p = 0.040). The 20 – 29 and 50 – 59 year age groups showed the highest prevalence of anaemia (64.5% and 64.7% respectively) with the 40 – 49 year age group showing the lowest prevalence of anaemia (42.9%) in relation to age.

Table 1: Prevalence of malaria and anaemia

	N	No. of positive cases	OR	95% CI	*p*
Malaria					
HIV infected	350	161 (46.0%)	16.31	7.41-35.87	<0.0001
Non-HIV	141	7 (5.0%)			
Anaemia					
HIV infected	350	198 (56.6%)	25.12	11.42-55.28	< 0.0001
Non-HIV	141	6 (4.3%)			

Table 2: Risk factors for malaria among HIV patients

	N	No. of Positive cases	OR	95% CI	P value
$CD4^+$count cells/µL					
< 200	195	104 (53.3%)	1.96	1.28-3.02	0.003
≥ 200	155	57 (36.8%)			
Gender					
Male	195	82 (42.1%)	0.70	0.46-1.07	0.097
Female	155	79 (51.0%)			
Age (yrs)				**Malaria**	
20 – 29	121	56 (46.3%)			
30 – 39	85	32 (37.7%)			
40 – 49	63	30 (47.6%)			
50 – 59	68	39 (57.4%)			
≥ 60	13	4 (30.8%)			0.126

Discussion

Malaria may be helping to spread the HIV-virus that causes AIDS (3). HIV-infected patients are at higher risk for malaria because of their weakened immune systems. Sub-Saharan Africa carries a high burden of both diseases thus co-infection is common in many areas there (10). This study focused on determining the prevalence of malaria and anaemia among HIV-infected patients as well as the effect of age, gender and $CD4^+$ T cell counts on its prevalence. A prevalence of 46.0% of malaria infection among HIV-infected patients was observed in this study. This is a relatively high prevalence that may be due to poor control measures. In countries like Togo, long-lasting insecticide treated nets have been distributed throughout the country (11). This kind of control programme has not been done in Nigeria, particularly, Benin City. There is therefore a need for an effective control programme to stem the tide of high malaria prevalence.

HIV infection was a risk factor for acquiring malaria infection in our study. This is consistent with previous findings (12). HIV-infected adults are more likely to develop malaria (13, 14), again consistent with our findings. The reason for this may be due to their weakened immune system induced by the HIV virus. However, Berg et al reported no significant association between HIV infection and malaria (15).

HIV infection has also been reported as an important risk factor for anaemia (12,16). Similarly, in our study HIV-infected patients were observed to have on 11 – 55 fold increased risk for acquiring anaemia. Bone marrow suppression by the HIV virus has been reported as a mechanism of anaemia among HIV-infected patients (17). $CD4^+$ T cell counts is used as a measure of immunity and HIV disease progression (18) and counts less than 200cells/µL increases the risk of opportunistic infections. In our study $CD4^+$ count of <200cells/µL was associated with an increased risk of malaria infection among HIV infected patients. This is in agreement with the findings of Whitwort et al (14) but not with that of Laufer et al (12). A decline in $CD4^+$ T cell counts below 200cells/µL increases immunosuppression and the risk of contracting an opportunistic infection.

Age and gender did not significantly affect the prevalence of malaria, a finding consistent with a previous report (15). It seems that the level of immunosuppression among HIV-infected patients determines the prevalence of malaria. However, in relation to anaemia, in our study age affected its prevalence among HIV-infected patients with those between 40 – 49 years of age having the lowest prevalence. The reasons for this are not clear. Among HIV patients with malaria, an anaemia prevalence of 70.7% was observed in this study (data not shown). The combined effect of malaria and HIV infection on erythropoiesis and red cell survival may be responsible for the higher prevalence of anaemia observed.

In conclusion, we observed a prevalence of 46.0% of malaria infection among HIV infected patients. HIV-infected patients are more likely to develop malaria and anaemia, while a $CD4^+$T cell count of < 200cells/µL was associated with an increased risk of malaria infection among HIV-infected patients. Age and gender did not affect the prevalence of malaria. The knowledge of HIV status may be valuable in the diagnostic evaluation of patients with suspected malaria and anaemia.

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Letter to the Editor: The Journal: electronic or print?

Dear Editor

On settling down into my comfortable chair with the printed version of the April 2009, Journal in one hand and a glass of chardonnay in the other, I was interested to read your Editorial (1).

I agree wholeheartedly with your comments and am very pleased to have on hand my printed version for future reference.

Thank you for addressing this issue.

Gail Toy
Microbiology, North Shore Hospital, Auckland

1. Siebers R. Editorial. The Journal: electronic or print, or both? *N Z J Med Lab Sci* 2009; 62: 2.

Reviewers for 2008/2009

The Editors would like to thank the individuals listed below for refereeing articles submitted to the Journal from September 2008 to August 2009. All submitted articles undergo peer review in order that the Journal maintains its high standard since 1948. Additionally, thoughtful comments and suggestions made by referees help authors in ensuring that their paper, if accepted, is put in front of the reader in the best possible light.

Not all papers submitted to the Journal are accepted for publication. In the last five years about 20% have been rejected as being either scientifically unsound, not novel enough, not applicable to the broad subject of medical laboratory science, or have previously been published in other journals (duplicate publication absolutely not allowed!).

The Editors cannot be experts in the many different disciplines of medical laboratory science and thus rely on quality peer review by referees. The following have generously and professionally given their time and experience in peer reviewing articles submitted to the Journal from September 2008 to August 2009, some more than once.

Robin Allen, Hamilton
Tracey Bathgate, Auckland
Jillian Broadbent, Christchurch
John Delahunt, Wellington
John Elliot, Wellington
Lance Jennings, Christchurch
Esther Lau, Christchurch
Mike Legge, Dunedin
Tony Mace, Hamilton
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School of Medicine and Health Sciences, University of Otago, Wellington

President's Report to AGM 2009

As has been recorded to in the Treasurer's report, the Institute is fortunate to currently be in a very sound financial position. This level of comfort has been achieved through prudent financial management by Council and the Executive Office over recent years. While Council is cognisant of the importance of retaining sufficient reserves to meet future contingencies, we believe that it is appropriate to allocate funds to new initiatives that will either benefit our members directly, or promote the profession to a wider audience. It gave me great pleasure to announce during the opening session of this year's annual scientific meeting, that Council has established two annual educational scholarships. These scholarships will be open to all Fellows, Members and Associate Members of the Institute, and will provide support for each recipient to attend an international or national scientific meeting to a maximum value of $7,500. Given the significance of the support afforded, there will be a requirement for scholarship winners to present either a poster or oral presentation at the meeting attended, as well as share the knowledge gained through the publication of a conference report in the Journal. It is many years since the Institute has offered travel awards, and Council is obviously gratified that current Institute resources make it possible to offer these two very significant awards to the membership each year. Given the prestigious nature of the scholarships, it seemed particularly fitting to name them in honour of two outstanding members of our profession who passed away during the year. During their professional careers, both Rod Kennedy and Barrie Edwards were actively involved in the affairs of the Institute. Both served long terms on Council, including significant terms as executive office holders. They were also both recipients of the TH Pullar award, itself a recognition of their standing within the profession. Throughout their careers, each in their own way made a huge contribution to the advancement of the profession and the betterment of conditions for medical laboratory scientists in New Zealand.

I would now like to devote a portion of my report to the issue of the medical laboratory workforce in New Zealand. Workforce planning was generally not an issue in the days of Barrie and Rod, when large annual intakes of trainee technologists were a feature of most laboratories. Indeed, I recall that in my own laboratory an annual intake of twenty trainees or more, for the basic training or diploma courses, was not uncommon during the 1970s. At the time, workforce statistics were not readily available, but there was little difficulty in recruiting school leavers to trainee positions and I would venture to suggest that the average age of medical laboratory workers in New Zealand at the time was in the mid-twenties. However, with the robust supply of scientists from the training programmes, retention of scientists posed an interesting paradigm. Newly qualifying scientists departed in droves for the obligatory overseas experience, with laboratories recording annual turnover rates for scientists in the vicinity of forty percent or more. Fortunately, this annual exodus was offset by the scientists returning from their sojourn abroad who, in the absence of such niceties as FTE caps or other budgetary restrictions, were invariably reemployed. Scientist manpower was not an issue, and laboratories were similarly generally well endowed with pathologists.

The situation is now very different, and the spectre of an approaching pathology workforce crisis is recognised not only in New Zealand, but internationally. One might ask why the sector has been relatively late in recognising the impending problem. In all likelihood this can be attributed to the very significant gains in productivity seen in pathology laboratories over the last twenty to thirty years, brought about through the introduction of automation, digital microscopy, auto-verification processes, point of care testing and other strategies. These technological innovations have resulted in the workforce numbers remaining relatively static over this period. However, the point may now have been reached where there is only limited scope for further efficiencies, and in fact it is likely there will be increasingly powerful diagnostic tests introduced in the future which will encourage additional testing and therefore place a greater demand on the workforce.

I believe that, in comparison to the pathologist workforce, we are poorly served with meaningful data on the current state of the medical laboratory scientist workforce. The response rate to the annual workforce survey distributed with the annual practising certificate renewals is poor, and the data obtained provides inadequate information, which is essentially limited to the demographics of the scientist and technician workforce. There has been no comprehensive survey undertaken to determine if a significant workforce shortage exists. I would suggest that the imperative for such a survey of the medical laboratory scientific workforce is significant and should seek data on key indicators including the number of vacant positions, ability to attract suitable applicants to advertised positions, the time required to fill positions, number of vacancies filled by overseas applicants and the amount of extra training required for appointees because they are not fully competent. A limited workforce survey was undertaken in 2008 by the DHBNZ medical laboratory scientist role extension think tank. The number of responses received from laboratories was disappointing but suggested that there was difficulty in recruiting scientists, particularly to specialist areas such as cytogenetics and molecular pathology, as well as problems in recruiting to regional and remote laboratories.

What must be of concern to all within the pathology sector is the lack of any coordinated national planning for an integrated pathology service and workforce. The laboratory DHB-driven tendering and restructuring ongoing since 2003 has done nothing to address this. However, it is significant that the Minister has now commissioned a project to explore whether there is a need for a more nationally consistent approach to the procurement of pathology services in New Zealand. As I indicated yesterday, Council will be seeking representation on any advisory groups established.

Healthcare demand is increasing, and the challenges for 21st century pathology will be many. Increased demand for pathology testing will stem from increasing public expectations of greater availability of personalised healthcare services, with improved and more convenient access to these services. Service expectation is likely to be higher on the part of the "baby boomers", as new technologies are rapidly developed, and this ageing population will have increased disease prevalence, with complex health problems and more co-morbidities. As well as the changing nature of healthcare demand, pathology services, as a component of the healthcare workforce, face a reducing supply of skilled professionals. Influences here include the increasing rate of exit from the workforce as the workforce ages, as well as the emergence of generation Y, who are not as committed to the same ethos of careers as previous generations and will likely inherit baby boomer capital. Already there is a reduction in the commitment to full time work, and the feminisation of the workforce is clearly resulting in more time out for a variety of reasons.

A significant issue for the MLS profession is the retention of skilled staff. If fully subscribed, the three BMLS courses in New Zealand should supply sufficient graduates for the needs of the profession. However, data from the MLSB annual workforce survey indicates that ten years post-graduation, as few as 40% of the new graduates remain employed in diagnostic laboratories. What is it that leads our bright young scientists to desert the profession? While some of the issues I have already identified certainly contribute to the difficulties in retaining staff, I believe that the lack of a satisfactory career structure is a significant factor. Current career progression for senior scientists is very much limited towards a managerial

path rather than technical progression, and consequently those with high level scientific and technical skills and aspirations are frequently lost to the profession.

In my address last year I reported that DHBNZ, as part of their Future Workforce project, had identified MLS as a priority workforce, and that a specific project for MLS role extension had been initiated. A sector Think Tank was formed in early 2008 to investigate and progress the concept of role extension. The Think Tank comprises primarily medical laboratory scientists, including university representation, as well as a DHBNZ Human Resources representative, and two nominees from the Royal College of Pathologists of Australia. In consideration of possible models for extended practice, the Think tank has looked to the United Kingdom, where the imperative of predicted pathology workforce shortages, especially amongst pathologists, has resulted in several health science professions establishing new training programmes. These programmes provide training for appropriate MLS to become highly specialised scientists, now known in the UK as Clinical Scientists. The established programme of study allows MLS undertaking the Clinical Scientist training to take the Royal College of Pathologists Part I and Part II examinations, and to achieve consultant status. This initiative has been very successful, and currently more than 25% of the membership of the Royal College of Pathologists is comprised of Clinical Scientists.

Since last year the Think Tank has developed a proposal for a Clinical Scientist training programme in New Zealand. It is envisaged that the programme would allow applicants who have completed a New Zealand BMLSc, or an overseas equivalent degree, to an appropriate academic level, to progress to clinical scientist Part I and part II training. During Part I training students would complete an advanced programme of study at post graduate level, which would most appropriately be an approved MSc programme.

It is envisaged that the Part II programme would be in conjunction with fulltime employment in a clinical laboratory, and selection of trainees for the programme of advanced study would be the responsibility of the training laboratories, and possibly the professional organisations. There would be a set number of annual trainee positions established to meet workforce requirements. The Part II training would build on the knowledge and experience gained during the BMLSc and Part I programmes. It is envisaged that the Part II programme would run over three or four years and that the students would be mentored and trained by Pathologists and senior scientists. In the final year trainees would sit an MRCPath, or similar professional examination.

While the UK clinical scientist training programme is provided by the Royal College of Pathologists, the Think Tank believes that our programme should ideally be supported by New Zealand pathologists and the Royal College of Pathologists of Australasia (RCPA), with the College assisting in curricula development and provision of the final examinations. With this in mind, the Think Tank recently submitted the Clinical Scientist proposal to the RCPA and has received a response indicating that the College is interested in working with the Think Tank on exploring options for establishing a programme for clinical scientist training. While discussions have been initiated with the RCPA, I do not believe that this should preclude investigating the feasibility of alternative pathways for clinical scientist training.

My three year term as your President is drawing to an end. I have enjoyed the challenges and opportunities of the last three years, and also valued the experiences afforded by the preceding four years on Council. I believe that the membership has been very well served by recent Councils, and I step aside at a time when the Institute is in good heart.

At such a juncture, it is informative to look back at previous President's reports, and to be reminded of the common challenges that various Councils have faced, as well as to appreciate the achievements of recent Councils. Twelve years ago, Shirley Gainsford reported, at the end of her first year as President, that her initial excitement at election to office was tempered by the fact that the Council had no elected representatives from three regions and that there were severe financial problems. During my time on Council, I have been concerned that so few of our profession are willing to stand for Council. While not in the position of being three regional representatives short, there have been a number of recent occasions when Council has been required to directly seek volunteers for positions due to lack of nominees. This year's election has seen a healthy competition for two of the regional representatives, but there is again one region without a nomination. Given the considerable depth of professional experience amongst our membership, I would encourage members to give serious consideration to nomination for Council positions. Council membership affords an opportunity to be influential in the leadership and progress of the profession. While the Council involvement requires commitment and can be challenging, there is the opportunity for personal development as well as the considerable satisfaction of putting something back into the profession.

Although Shirley's Council of 1997 turned around a deficit of $41,000 to a profit of $1,400, the state of the Institute's finances at that time was precarious. Shirley identified the problems as falling membership, unknown income, expenditure previously approved without knowing if funds would be available and the cost of examinations and journal publication exceeding income. For me, one of the highlights of my time on Council has been the realisation of the current strong financial position of the Institute, that I referred to at the opening of this address. This has been achieved through a number of important initiatives. A new chart of accounts was introduced by Council, which has served to apportion income and expenditure appropriately, and has greatly assisted Council in financial decision making. The operation of the SIGs has been formalised, particularly through the introduction of standardised budget formats which now incorporate all of the true costs associated with the annual seminars, and the requirement for a profit margin. A very significant initiative was the 2006 review of the Executive Office, which resulted in the direct employment by the Institute of Fran as Executive Officer, as well as the appointment of Sharon Tozer to manage the accounts. At the same time, accounting practices were reviewed and brought in-house. In recognition of the Institute's increased reliance on IT, two part-time subcontractor positions were established for IS support and the webmaster role. These changes have resulted in appropriate cash reserves to limit the Institute's financial risk and ensure sufficient reserves to cover any future contingencies. Importantly, sufficient funds are now available to develop new initiatives for the benefit of our members as well as further promote the profession. My final comment on Institute finances is to acknowledge the excellent advice provided to Council by the Secretary/Treasurer, whose financial stewardship has been influential over recent years.

Without doubt, the development and introduction of the Institute's CPD programme must rate as one of the other highlights of my time on Council. At the time that I was first elected, Council was well advanced on putting together a voluntary CPD programme. However, the enactment of the HPCA Act in 2003 provided the Institute with an impetus to develop a programme that would meet the needs of the Medical Laboratory Science Board for a recertification programme for medical laboratory scientists. Council put a huge effort into the development of the programme and I believe that the end result should be a source of pride to the members of the Institute. The programme is innovative in the activities defined for points allocation, and the use of hours as a standard ensures equable allocation of points for differing continuing education activities. Council made an early decision to pursue a web-based format for the programme, allowing members to self-manage their recording of CPD activities via the Institute's website, as well as participate in on-line learning activities such as the NZIMLS classroom. The on-line format for the CPD programme has proven to be very effective and well accepted by members. It is a significant point of difference from other programmes offered, even internationally. I believe that one of the greatest strengths of the Institute's programme lies in the independent auditing of points claimed by practitioners. During the first three years of the programme IANZ performed this role. However, last year the decision was made to issue an RFP for the auditing function, and Council was very pleased to award the contract to Kirsty and Graham Walker, both of whom have considerable experience in the area of quality systems and auditing. Also last year, in

response to suggestions from practitioners, the auditors and the Board, Council made a number of changes to the programme and subsequently published a new edition of the CPD booklet to reflect these changes. The ministry's 2008 review of the HPCA Act showed that the Institute's recertification programme has been well accepted by practitioners, with 64% of MLS responding that the requirement for continuing education was about right.

In concluding my consideration of Council's achievements it is pertinent to recognise the emphasis that Council has placed on raising the profile of the profession. At the time that I took office, there was a clear message from the membership for greater promotion of the profession. Council believed that efforts in this regard should most profitably be directed at secondary school student, and we hence embarked upon a number of initiatives. Foremost amongst these has been participation in the national career expos over the last two years, as well as the sponsorship and participation in the "Just the Job" television series. Feedback and follow up enquires indicate that this promotional activity has been particularly effective and Council has subsequently committed to continued involvement in the career expos.

I have greatly enjoyed my term as President and value the encouragement that I have received from the membership over the last three years. To all of the current Council members, and our Executive Officer Fran, I would like to express my thanks for your support and assistance.

The Institute has a new President ready to take office. Kevin has been a hard working member of Council and a very effective member of the executive during my term as President. The fact that Kevin is the youngest member of the Institute to have been nominated to the position of President attests to his abilities, and I wish him and the incoming Council all the best.

Robin Allen

Journal article questionaire Transfusion SIG

Article: Garratty G. The James Blundell Award Lecture 2007: Do we really understand immune red cell destruction? *Transfusion Medicine* 2008, 18:321-334.

Questions

1. Which two ways can red cell destruction be mediated?
2. How does extravascular lysis occur?
3. What are the 7 antibody characteristics that influence the pathogenicity of the antibodies?
4. What did Barker *et al* find in their 1999 study on haemolytic anaemia?
5. Why do cells coated with C3dg give a positive DAT reaction, with complement specificity, but survive normally in circulation?
6. What has the term delayed serological transfusion reaction (DSTR) been used to describe and when was it first used?
7. What are three explanations for DAT negative haemolytic anaemia?
8. Sunada *et al*. used the term 'armed' macrophages in 1985, what had they found?
9. 'Bystander' lysis was first described by Dameshek, what is it and how did Thompson & Lachmann expand on this description?
10. What is the authors preferred definition of a clinically significant antibody and what is it?

Answers on page 86.

Journal article questionaire Haematology SIG

Article: "Evaluating five dedicated automatic devices for haemoglobinopathy diagnostics in multi-ethnic populations."

Authors P Van Delft, E Lenters, M Bakker-Verweij, M de Korte, U Baylan, CL Harteveld, PC Giodarno

International Journal of Laboratory Hematology, October 2009, Vol.31, No.5. p 484 – 495.

Questions:

1. Name the five analyzers evaluated and for each analyzer give the technology used.
2. State the normal range for Hb A_2 obtained in the study by testing a large cohort (i.e. 100 'normal' individuals)
3. Considering the Hb A_2 results displayed in tables 2 and 3 (from all 5 analyzers) what fact becomes apparent?
4. Why should confirmation at DNA level be sought whenever a variant Hb is found?
5. What are the advantages of employing two different technologies/systems?
6. Why is the Hb A_2 overestimated in the presence of Hb S when using the Variant II, HA8160, G7 and Ultra[2]?
7. Which of the analyzers is the quickest?
8. In which of the analyzers are glycated fractions not separated out?
9. Which analyzer could elute an abnormal Hb into 2 separate peaks falsely giving the impression of the presence of 2 different abnormal haemoglobins?
10. Which analyzer is able to separate Hb A_2 from Hb E?
11. With a borderline high Hb A_2 result what other parameters should be considered?
12. If the borderline Hb A_2 result is accompanied by thalassaemic indices what should be requested?
13. Name a condition mentioned in the article which can cause an elevated Hb A_2 result.
14. There is one other condition to consider when a borderline high Hb A_2 result is encountered in a patient with a moderate microcytosis (this is not in the article) what is it?

NB. There is a typing error in the paragraph headed "**The normal and abnormal values"** page 485. - " > 1% Hb F" should be " <1% Hb F". (Our normal Hb F normal range at DML is <2.0%)

Questions compiled by Sheila Ryken, Special Haematology, Diagnostic Medical Laboratory Auckland.
Contact details for a copy of the journal article; Ph. (09) 5714000 extn. 9123 or email: sryken@dml.co.nz.

Answers on page 86.

Journal questionnaire

Below are 10 questions based on articles in the November 2009 issue of the Journal. Read the articles fully and carefully, most questions require more than one answer.

Answers are to be submitted through the NZIMLS web site. Make sure you supply your correct email address and membership number. It is recommend that you write your answers in a word doc and then cut & paste your answers on the web site.

The site has been developed for use with Microsoft's Internet Explorer web browser. If you are having problems submitting your questionnaire and you are using the Firefox web browser, try resubmitting from a computer or system using Microsoft's Internet Explorer.

You are reminded that to claim valid CPD points for successfully completing the Journal questionnaire you must submit an individual entry. It must not be part of a consultative or group process.

The site will remain open until Friday 26th February 2010. You must get a minimum of 8 questions right to obtain 5 CPD points.

Journal questions

1. What is the possible reason for the high concentration reading for white cell count, red cell count and protein by the Urisys 1800.

2. What can cause blood-stained and abnormally coloured urine samples.

3. What are white cell counts measured by the Urisys 1800 directly proportional to, and what does this mean.

4. What factors can potentially influence the measurement of white cells by the Urisys 1800.

5. How is the inhibitory effect of vitamin C in the measurement of red cells by the Urisys 1800 minimised.

6. What was the limitation of the Urisys 1800 study and how may this be overcome.

7. Which age groups showed the highest and lowest prevalence of anaemia in HIV-infected patients.

8. What is the possible reason for HIV-infected adults to develop malaria.

9. What has been reported as a mechanism of anaemia among HIV-infected patients.

10. What is associated with an increased risk of malaria among HIV-infected patients.

Questions and answers for the August 2009 journal questionnaire

1. How is bone mineral density maintained in the able-bodied population.
   By physical activity and the combination of force exerted via the long bones and active muscle tensions.

2. Which bone markers were measured in the paper by Jones and Legge and by what method principles.
   Deoxypyridinoline (Dpd) by immunoassay and bone alkaline phosphatase (BAP) by competitive immunoabsorbent assay specific for BAP.

3. What was a significant limitation in the study by Jones and Legge and what did this limitation not allow.
   The low number of sedentary spinal cord injury (SCI) men, which did not allow a more rigorous statistical investigation of the data.

4. In the study by Jones and Legge what evidence does their results present and what further work do they propose.
   Remodelling dynamics differ in SCI individuals and vary dependant on physical activity and duration of injury. Extending these preliminary findings to a larger athletic SCI population to establish how duration and intensity of exercise and age and duration of injury may affect bone remodelling.

5. What is generally the gold standard for the management of HIV patients.
   Highly active antiretroviral therapy with a combination of two nucleotide reverse transcriptase inhibitors and a potent protease or non-nucleoside reverse transcripterase inhibitors.

6. What can cause anaemia in HIV patients.
   Infections, neoplasms, dietary deficiencies, blood loss, and medications.

7. What determines the antibacterial property of human urine.
   Low pH, high urea, and high osmolality.

8. How does adrenocortical carcinoma usually present in women and what does this suggest.
   With dysfunctional uterine bleeding with increased amounts of androstenedione and estrogen resulting in Cushing's syndrome suggesting inefficient conversion of cortisol.

9. Cortisol-producing adrenal adenoma is indicated by?
   Elevation in baseline urine free cortisol and reduction in plasma androgen secretion in the cortisol-induced suppression of adrenocorticotropin hormone and subsequent androgen-producing zona reticularis of the adrenal gland.

10. What do molecular studies of adrenocortical tumour cells show.
    Mutations of the tumour suppressing genes TP53, TP57 and increased production of insulin-like growth factor 2.

Advertisers in this issue

Answers for the Transfusion SIG journal questionnaire

1. (1) Complement activation, which can lead to membrane damage and breakdown (intravascular lysis). (2) Sensitised red cells may react with macrophages.
2. The red cells are coated with IgG, IgA or complement; these proteins react with specific receptors for these proteins on macrophages in the spleen and liver (Kupffer cells).
3. Class, subclass, specificity, thermal amplitude, complement-activating efficiency, affinity and amount of galactose on the Fc carbohydrate.
4. They found there were wide fluctuations in galactosylation of the IgG autoantibody, these appeared unrelated to the severity of the haemolytic process, thus it may take a total or near total loss of carbohydrate before immune red cell destruction is affected.
5. There are no are efficient receptors for C3dg (or C3d) which is a breakdown product of iC3b, therefore once the red cells are coated with C3dg only they are not destroyed.
6. (1) DSTR is used to describe delayed transfusion reactions associated with formation of alloantibodies, leading to a positive DAT (sensitisation of transfused red cells), but no evidence (no clinical and laboratory signs) of haemolytic anaemia. (2) It was first used in 1990 by Ness et al.
7. (1) RBC-bound IgG below the threshold of the antiglobulin test, which requires 100-200 IgG molecules/RBC before agglutinates can be seen. RBC-bound IgM or IgA. (2) There are no FAD licensed anti-IgA/IgM for use with RBC. Immunological reagents can be standardised for the DAT. (3) Low affinity antibodies. Such antibodies can be washed-off RBCs when performing the DAT, particularly if washes are with 37°C saline.
8. They found that monocytes in patients with haemolytic anaemia were more active, in phagocytosing IgG-coated red cells, compared with monocytes from healthy individuals.
9. (1) 'Bystander' lysis = lysis of red cells as a result of complement activation by antigen-antibody reactions remote from the affected cells. (2) Thompson & Lachmann showed lysis could also be associated with the membrane attack complex (C5b-9), without C3 or antibody being detected on the red cell membrane.
10. The British Committee for Standards in Haematology definition which says "clinically significant antibodies are those that are capable of causing patient morbidity due to accelerated destruction of a significant proportion of transfused RBCs".

Answers for the Haematology SIG journal questionnaire

1. VARIANT II™ - High Performance Liquid Chromatography (HPLC)
   HA8160 - HPLC
   Capillarys - Capillary electrophoresis
   G7 - HPLC
   Ultra^2 - HPLC
2. 2.32 – 3.48% (mean 2.9%)
3. Each analyzer requires its own normal range. No common normal range can be applied to all analyzers.
4. Confirmation at DNA level is required to identify fractions with normal isoelectric points remaining under the Hb A fractions or hyper unstable haemoglobins that may remain invisible or disappear quickly.
5. The advantages of employing two different technologies/ systems are that artefacts such as over estimation of Hb A_2 and Hb F are recognized and showing up any fraction not separated on either one or the other system.
6. Hb A_2 is overestimated because Hb S_{1c} overlaps the A_2 fraction.
7. Capillarys.
8. Capillarys
9. HA8160
10. Capillarys
11. Haematological parameters i.e. are these thalassaemic indices?
12. Molecular analysis.
13. HIV-infected patients treated with zidovudine.
14. Hyperthyroidism.

The POLHN distance learning programme

The POLHN programme funded by WHO continues to be a great success, and this year is no exception. The programme is designed to qualify medical laboratory technicians in the medical laboratory sciences. The modules however are not only for new laboratory staff who wish to study towards the PPTC's Diploma in Medical Laboratory Technology, but also for qualified staff who wish to refresh or enhance their knowledge in the medical laboratory sciences. The Biochemistry, Haematology and Microbiology modules contributing towards the PPTC's Diploma in Medical Laboratory Technology have been completed for this year and Transfusion Medicine has been sent and is currently underway. 16 Candidates have passed the Biochemistry module, 37 candidates passed the Haematology module and 28 Microbiology candidates have submitted their final assignments for assessment by the PPTC. The Transfusion Science candidates are now beginning to send in their completed assignments to the PPTC for assessment.

The Immunology module which is the final module in the series contributing towards the Diploma will be released on the 9th November to those students registered for this particular study.

The PPTC has also developed a "Laboratory Management" module which is now ready to be launched and those who have registered should expect to receive the teaching material by at least the end of October early November. This module consists of the 12 Quality essentials of Laboratory Management and includes a comprehensive study of each (ie) Laboratory Organisation; Purchasing and Inventory; Documents and Records; Process Improvement; Personnel; Process Control and Specimen Management; Occurrence Management; Customer Services, Equipment; Information Management; Assessments; and Facilities and Safety.

Courses held at our centre

A course in Microbiology was held in Sept/Oct of this year and seven students from both the North and South Pacific attended. Included were : Johnny Amor from Pohnpei, Emily Aisek from Chuuk, Lucy Dibay from Yap, Richard Malili from Port Villa Vanuatu, Paul Makikon from Santo Island Vanuatu, Lorie Lemto from the Marshall Islands and Shanyko Benjamin from Nauru. John Elliot, our PPTC Director and microbiology lecturer, provided an excellent learning programme for the students.

The course introduced the participants to the theoretical and practical aspects of current methods used in the isolation, identification and antimicrobial susceptibility testing of micro-organisms especially those of public health importance. The topics covered included: organisms and parasites involved in respiratory tract infections, diarrhoeal diseases, sexually transmitted infections and other infectious diseases.

Serological and other rapid methods for identification of bacterial and viral diseases, including Hepatitis B & C, HIV and other STIs, were also discussed as was the role of the microbiology laboratory in the surveillance of nosocomial infections and notification of infections of public heath importance. This 4 week course also included practical sessions relating to the various topics mentioned.

2009 Microbiology course

The Microbiology course was yet another great success and the PPTC would like to especially thank Wellington Hospital Laboratory Services for the contribution it made in terms of sample availability and technical expertise offered to the course over its 4 week duration.

On completion of the course, the students attended a graduation ceremony at the PPTC where Dr Colin Tukuitonga, Chief Executive Officer of The Ministry of Pacific Island Affairs, presented them with their certificates and spoke to them of the importance of accurate and timely laboratory testing in the diagnosis of both infectious diseases and non-communicable diseases .

Courses for the rest of 2009

The **Blood Bank Technology Course** to be held at the Centre this year is scheduled to begin on the 16th November and conclude on the 11th December.

The PPTC engages Wellington Hospital technical experts highly proficient in Transfusion Medicine to provide a four week lecture series covering routine blood grouping, blood group antigens, crossmatch techniques, antibody detection, transfusion reactions, haemolytic disease of the newborn, blood donor selection, organisation of a blood bank and the appropriate use of blood components in transfusion medicine. Practical sessions are also provided, focusing on correct technique and fundamental basic procedure.

The content of this course is currently being re-assessed for 2009 so that the PPTC is confident that it has met the practical needs of all students attending. Practical sessions will focus on repeated basic methodology, so as techniques are mastered to levels of excellence. The final week of the course will be set aside for an overview of current techniques in the detection of Transfusion transmissible diseases including, HIV, Syphilis, Hepatitis B and C.

Country visits

Rarotonga: Phil visited Rarotonga in June of this year where he conducted a quality assurance audit at Rarotonga Hospital Laboratory in Avarua. It was a great opportunity to meet with the staff and at the same time conduct blood cell morphology workshops to assist them in improving the quality of their diagnostic skills.

Manila, Palau and Yap: Phil leaves on the 17th October for two weeks, travelling to the Philippines where he will meet with management of WHO in Manila and then on through Guam to Palau and Yap to meet with laboratory staff. The visits have been set to assess the current programmes that we as a training centre supply to the Pacific nations and to identify the needs that each laboratory may have in the pursuit of a Quality Management System.

Samoa: John and Phil are scheduled to travel to Samoa in early November to visit the National Hospital in Apia for the purpose of assessing future technical training requirements as well as the processes of Quality management

Courses for 2010

Haematology and blood cell morphology. March - April 2010
This course will provide trainees with guidelines for the objective microscopic evaluation of white cells, red cells and platelets in both health and disease. Trainees will be introduced to the workings of the microscope in terms of correct operation, correct use of objectives, and essential maintenance. They will learn the principles of Romanowsky staining, the preparation of stains and buffers, causes of inconsistent staining quality and the correct staining techniques used in the identification of malarial parasites. Students will also be introduced to the blood film in terms of sample quality, the effects of anticoagulants, the correct technique in blood film making, morphological artefacts, buffy coat preparations, and the correct storage of blood films. Students will learn extensively the correlation of blood film findings with results obtained from manual and or automated methods for red cell, white cell and platelet parameters. Morphological terminology with reference to origin and correct application will also be discussed. The lineage of all blood cells will be followed systematically from the common stem cell through all stages of development. A comprehensive account of both normal Haematology and pathological Haematology will be given over the 4 week teaching programme. The course is designed to give trainees confidence in the preparation, staining and examination of blood films, be able to differentiate the white cell count into both normal and abnormal populations and finally recognise and comment on with confidence, abnormal film findings in an extensive range of common blood cell disorders.

Biochemistry update. August - September 2010
This will be an update course in which participants will learn of recent advances in testing procedures relating to diseases of current interest in the Pacific. Many of these are non-communicable diseases such as diabetes and cardiac problems. Other topics covered will include the importance of quality processes including internal quality control, external quality assessment and Laboratory Quality Systems.

Blood bank technology. November 2010
This course will include units of study covering the theoretical and practical aspects of the following topics; routine blood grouping, blood group antigens, crossmatch techniques, antibody detection, transfusion reactions, haemolytic disease of the newborn, screening blood for infectious agents, blood donor selection, organisation of a blood bank and the appropriate use of blood components in transfusion medicine.

Online distance learning courses
It is anticipated that we will repeat the 5 modules leading to the Diploma in Medical Laboratory Technology [PPTC] commencing with Biochemistry at the beginning of March. In addition, other courses such as Laboratory Management and Laboratory Diagnosis of STIs will also be offered through the POLHN website. Check with your POLHN Country Co-ordinator or the POLHN website and also the PPTC website to keep up to date with these courses.

Med-Bio Journal Award

med·bio
A DIVISION OF GLOBAL SCIENCE & TECHNOLOGY LIMITED

Med-Bio, a division of Global Science & Technology Ltd. offers an award for the best article in each issue of the *New Zealand Journal of Medical Laboratory Science*. All financial members of the NZIMLS are eligible. The article can be an Original, Review or Technical Article, a Case Study or a Scientific Letter. Excluded are Editorials, Reports, or Fellowship Treatises. No application is necessary. The Editor and Deputy Editor will decide which article in each issue is deemed worthy of the award. If in their opinion no article is worthy then no award will be made. Their decision is final and no correspondence will be entered into.

Winner of the Med-Bio Journal Award for the August 2009 issue was Sujata Hemmady, LabPlus, Auckland for her article "Adrenal carcinoma: a case study". *N Z J Med Lab Sci* 2009; 63 (2): 48-50.

NZIMLS Journal Prize

Council of the NZIMLS has approved an annual Journal prize for the best case study accepted and published in the Journal during the calendar year. The prize is worth $200.

Case studies bring together laboratory results with the patient's medical condition and are very educational. Many such studies are presented at the Annual Scientific Meeting, SIG meetings, and the North and South Island Seminars, yet are rarely submitted to the Journal for wider dissemination to the profession. Consider submitting your case study presentation to the Journal. If accepted, you are in consideration for the NZIMLS Journal Prize and will also earn you CPD points. Please contact the Editor or any Editorial Board Member for advice and help. Contact details are on the NZIMLS web site (www.nzimls.org.nz) as are instructions to authors.

No formal application is necessary but you must be a financial member of the NZIMLS during the calendar year to be eligible. All case studies accepted and published during the calendar year (April, August and November issues) will be considered. The Editor, Deputy Editor and the President of the NZIMLS will judge all eligible articles in December each calendar year. Their decision will be final and no correspondence will be entered into.

Minutes of the 65th Annual General Meeting held at the Marlborough Convention Centre, Thursday 20TH August 2009 commencing at 7.30am

Present:
The Chairman resided over approximately 30 members.

Apologies:
Moved R Siebers, seconded C Pickett
That apologies be accepted from Warren Dellow and Ken Beechey
Carried

Proxies:
Moved J Broadbent, seconded C Kendrick
That the list of three proxies as read by the Secretary be received
Carried

Minutes of the previous annual general meeting
Motion:
Moved C Kendrick, seconded R Siebers
That the Minutes of the 64th Annual General Meeting held on 28th August 2008 be taken as read.
Carried

Motion:
Moved A Bunker, seconded M Legge
That the Minutes of the 64th Annual General Meeting held on 28th August 2008 be confirmed as a true and correct record.
Carried

Business arising from the minutes
Nil

Remits as circulated
Moved R Hewett, seconded K Taylor
That Policy Decision Number 4 be reaffirmed:
Policy Decision No 4 (1991): That the Code of Ethics as circulated to all members be adopted by the New Zealand Institute of Medical Laboratory Science (Inc).
Carried

Moved R Hewett, seconded K Taylor
That Policy Decision Number 6 be reaffirmed:
Policy Decision No 6 (1979): That the Council must be informed in advance of national workshops, seminars or similar gatherings which are being conducted under the aegis of the NZIMLS.
Carried

Presidents report
Moved R Allen, seconded D Bunker
That the President's Report be received.
Carried

Annual report
Moved M Matson, seconded M Legge
That the Annual Report be received.
Carried

Financial report
Moved R Hewett, seconded R Siebers
That the Financial Report be received
Carried

Election of officers
The following members of Council were elected unopposed:

President	K Taylor
Vice President	K Beechey
Secretary/Treasurer	R Hewett
Region 1 Representative	M Matson
Region 2 Representative	C Pickett

The results of the elections for:

Region 3 Representative	K Allan	92
	J Wypych	13
Region 5 Representative	A Buchanan	6
	T Taylor	27

Moved R Hewett, seconded C Kendrick
That the election of officers be approved.
Carried

R Hewett acknowledged R Allen tenure as President.

Presentation of awards

The award winners were announced and the following awards were presented by the President:

Qualified Medical Laboratory Technician Awards
Clinical Biochemistry – Tracey Maw, Diagnostic Medlab
Haematology – Richard Johnson, Medlab Central
Histology – Victoria Austin, Diagnostic Medlab
Immunology – Alice Moono,Quari, Canterbury Health Laboratories
Microbiology – Rosalie Bennett, Diagnostic Medlab
Transfusion Science – Estrella Supas-Milne, New Zealand Blood Service, Dunedin
Transfusion Science – Sandra Robinson, New Zealand Blood Service, Christchurch

Qualified Phlebotomy Technician
QPT – Dale Russell Southern Community Laboratories, Christchurch

Qualified Specimen Services Technician
QSST – Douglas Fraser, Southern Community Laboratories, Dunedin

Honoraria
Moved R Siebers, seconded M Legge
That no honoraria be paid
Carried

Auditor
Moved R Hewett, seconded K Taylor
That Hilson, Fagerlund and Keyse be appointed as the Institute's auditors for the 2009/2010 financial year.
Carried

General business
Moved R Hewett, seconded A Buchanan
That Rule 24(c) be changed to read:
"On the winding-up of the Institute or its dissolution by the Registrar or Incorporated Societies, the real property and all other asses, funds, investments and other possessions of the Institute shall be realised for cash as soon as reasonably possible after the winding up or dissolution. If there shall remain after due settlement of just debts and liabilities any properties whatsoever whether real or persona, and/or monies, the same shall be paid to such registered trust which is charitable under the laws of New Zealand as the meeting may determine.".
Carried

PPTC
On behalf of the PPCT, Phil Wakem thanked the Institute for the donation of $6,000.

Venue for the 2010 Annual General Meeting and Annual Scientific Meeting
Copthorne Hotel & Resort, Pahia, Bay of Islands, 23-27 August 2010

Venue for the 2011 combined South Pacific Congress
Gold Coast Convention Centre, 22-26 August 2011. This congress is to be hosted by the Australian Institute of Medical Laboratory Science.

Meeting closed 8.02am

Abstracts of oral and poster presentations at the NZIMLS Annual Scientific Meeting, Blenheim, August 2009

Editor's note: Only abstracts that inform have been included. Excluded are abstracts in which the presenter indicated that results or findings would be presented.

Polycystic ovary syndrome - clinical and laboratory update
Penelope Coates, S A Pathology, Adelaide

Polycystic ovary syndrome (PCOS) is defined as clinical or biochemical evidence of increased androgens, in a woman with evidence of anovulation, in the absence of any other cause. The 'cysts' are follicles, and neither specific to PCOS nor essential to the diagnosis. To confirm the diagnosis: Anovulation can be assumed in a woman with irregular periods without further testing. If Rachael is sexually active we should check hCG as ultrasound will not detect a pregnancy before 4 weeks. Acne is not as specific for hyperandrogenism as hirsutism. As most women will use cosmetic measures, check the history, and examine other sites. Testosterone and SHBG, with calculated free androgen index, is the best biochemical screen. Normal testosterone does not exclude the diagnosis as the assay is less accurate in the female range. The main use of testosterone is to exclude very high levels (>8nmol/L), where an androgen producing tumour should be suspected. To exclude other causes of these symptoms: Exclude common causes of oligomenorrhoea with TSH and prolactin. Consider 17-hydroxyprogesterone to exclude late onset congenital adrenal hyperplasia if total testosterone is >4nmol/L. Screen for Cushing's syndrome with urinary free cortisol only if there is clinical suspicion. To screen for metabolic consequences: Insulin resistance appears to be the primary defect in PCOS, even in normal weight patients. The best tests are clinical. Waist measurements are useful both as a screen and to monitor therapy. Acanthosis, velvety black pigmentation on the neck, axilla or groin, is unusual but highly specific. A 2-hour oral glucose tolerance test is appropriate as there is a 2 to 4-fold increased risk of diabetes. Fasting or glucose stimulated insulin is highly variable and not recommended. Also check plasma lipids, screening for dyslipidaemia (high triglycerides/ low HDL) or high LDL, both of which increase cardiovascular risk.

A patient with 'pseudo-Addison's' disease
Chris Florkowski, Canterbury Health Laboratories, Christchurch

Interference in immunoassays is a widely recognized problem, which could potentially lead to unnecessary investigations and treatment. We describe a case where interference in a cortisol immunoassay led to a falsely low serum cortisol concentration and interference in the free thyroxine assay led to falsely elevated serum thyroxine concentrations, in the same patient. A 42-year-old woman with documented hypothyroidism underwent a synacthen test for suspected adrenal insufficiency. Previous thyroid function tests had been discordant and difficult to interpret, with elevated thyroxine and non-suppressed thyroid-stimulating hormone. The synacthen test showed a subnormal cortisol response and she was commenced on cortisol replacement. Clinically, it was doubted whether she had true adrenal insufficiency and it was thought that the cortisol results might be artefactually low due to assay interference. Cortisol was measured by an alternative immunoassay, before and after incubation in an antibody blocking tube ('Scantibodies'), after heat treatment and also after treatment with Protein A. The results supported assay interference and cortisol 'replacement' was stopped. Thyroxine had been discontinued although thyroid function tests (TFTs) were significantly different between analytical platforms, also consistent with interference. Thyroxine replacement was restarted and once on a stable dose, the discrepancy in TFTs was also investigated by similar procedures as for cortisol. Good clinician-laboratory interface and laboratory work-up of patients with results that are discordant from the clinical findings can reduce unnecessary investigation and inappropriate treatment.
Reference: *Ann Clin Biochem* 2009; March; 46:172-5.

Syndrome X, Y or Z? Spinal cord injury and the metabolic syndrome
L Jones, M Legge, A Goulding, University of Otago, Dunedin

Purpose: To identify metabolic changes in spinal cord injured (SCI) athletes.
Methods: 20 SCI and 20 fit matched controls under went whole body composition analysis, blood sampling for lipoproteins and a glucose tolerance test. Results were analyzed by comparative analysis between SCI and controls.
Results: Significant changes were identified in bone density, fat and lean muscle mass in the SCI. HDL was significantly decreased in the SCI ($p<0.001$) and the SCI demonstrated insulin resistance.
Conclusions: In this study seven of the SCI met all four requirements for Metabolic Syndrome and all of them met at least one. Physical activity did not off set the development of Metabolic Syndrome.

Cher bro': a thought that may cross your mind
John Waldon, Massey University, Palmerston North

My introduction to phlebotomy was supervised with patience, wisdom and steely resolve. Without mentioning names and causing acute embarrassment, my teacher strapped on a tourniquet after rolling up her sleeve and pointed unflinchingly to the vein. Blood was drawn. I felt like I was wearing boxing gloves. I was nervous, ill at ease, not sure to release the tourniquet. To complicate things after the needle was withdrawn I was unsure how to hold the sample tube into which I was expected to transfer the blood sample. For those who remember their first blood, if you were as lucky as me, there should be no bead a sweat rolling down you back about now. Understanding your patient can generate similar levels of anxiety. When your patient has cultural and perhaps language norms that are different to yours, overcoming this is a challenge but not impossible. Maori have well established protocols for the handling of the person, the processing of bodily samples, their correct disposal and respecting the integrity of a person, their mauri. If the patient and health professional are in agreement, the outcome could be captured in the acknowledgement 'cher bro'. If you were to feel good about greeting a Maori at any time of the day, tena koe will suffice.

The patient is the customer
Ross Hewett, LabPLUS, Auckland

There is often confusion around who really are our customers and this is understandable because very rarely do we have any direct contact with patients, it is the clinical staff, doctors and nurses to who we report our findings. Laboratories in both the community and hospitals are funded via the DHB's by the state, in other words, the taxpayer. They want a level of care from whatever provider has the responsibility of delivering that service; wither it be a community or hospital laboratory, a GP, a specialist or a midwife. Our duty of care responsibilities are to our patients, it is their biological material we handle everyday and while a clinician may use the information we provide to enable a satisfactory health outcome, our patients are our customers.

NZIMLS Fellowship
Rob Siebers, University of Otago, Wellington

Fellowship of the NZIMLS is the highest academic category of membership offered by the NZIMLS. Routes of obtaining Fellowship are by examination, thesis, or submission of published peer-reviewed papers. Fellowship by examination consists of 2 parts. Part 1: two written papers each of 3 hours duration. Part 2: dissertation of 3000 - 5000 words. Candidates may be exempted Part 1 of the examination if they hold an approved postgraduate qualification at least at post-graduate diploma level or Fellowship of AIMS, IBMS or AACB. Fellowship by thesis. In an approved medical laboratory science subject not exceeding 20,000 words which is based on the MSc by thesis requirement of NZ Universities. Fellowship by papers. Minimum of seven peer reviewed publications, the applicant must be 1st author of at least four, they must have been published in international or discipline acknowledged scientific journals, and accompanied by a review of the submitted publications of 3000-5000 words. Cost of Fellowship is $900 (Part 2: $250). Currently there are 27 Fellows and a further seven candidates are undertaking Fellowship. The Fellowship Committee comprises three Fellows, currently Ann Thornton, Jillian Broadbent and Rob Siebers. Massey University recognises Fellowship for enrolment in the PGCertSci, while AUT and Otago University are considering exemptions to their post-graduate medical laboratory science programmes. There have been individual instances of Fellows obtaining part exemptions for post-graduate studies, and recognition for Fellowship of other professional organisations. In the future it is hoped for recognition of Fellowship of the NZIMLS in industrial awards, academic recognition in NZ and overseas, and acceptance by the profession, employers and by overseas medical laboratory science organisations.

Options for graduate studies in medical laboratory science offered at Massey University
Chris Kendrick, Massey University, Palmerston North

Massey University offered the BMLSc programme for students for the first time in 1993. In 2000 the MSc (MLSc) was offered providing students with access to University Graduate Study while being able to retain employment in their laboratory. The programme is the equivalent of one year of fulltime study and is achieved by most over 3-5 years. Massey University also offers the GradDipSci pathway to NZ registration as a Medical Laboratory Scientist.

AUT post graduate qualifications in medical laboratory science
Holly Perry, Auckland University of Technology, Auckland
AUT offers three new post graduate qualifications in medical laboratory science from 2009. The Master of Medical Laboratory Science is a 2-year research Masters. The post graduate Certificate and Diploma in MLS consist of post graduate papers, and can be credited to the Masters programme for those wanting to progress to thesis in the Masters. Papers are offered by attendance for full or part-time students.

The Pullar Address 10 years on. Reconstitution of the laboratory
John Aitken, Southern Community Laboratories, Christchurch

In 1999 I was asked to give the Pullar Address at the South Pacific Congress in Christchurch. I raised a number of issues, including the direction of medical laboratory science in New Zealand. I tackled this by 'deconstructing' the laboratory, to see how it worked. The consequences of decisions made in the 1980s by the NZIMLS were just starting to become apparent, including the decision to move away from the Polytechnic-based training schemes in favour of the recruitment of science graduates able to specialise in particular disciplines as a stop-gap measure. Degree-based training through the Universities was introduced, and the first graduates from the BMLS courses were being inducted into the workplace. The nervousness felt by some in 1999 was well justified, as subsequent events have shown. Unlike the Rolling Stones, time is not on our side. It may already be too late. A road map out of the Chaos is urgently needed. Prior to this talk, the audience should consider several questions: Is the Profession in urgent need of more managerial experience and training? Is the Profession in urgent need of more post-graduate medical laboratory scientists? Is research a necessary skill for a Medical Laboratory Scientist? What would make you happy at work?

Is wine good for your health?
Rob Siebers, University of Otago, Wellington

Over the years epidemiological studies have supported the hypothesis that moderate wine consumption is good for your health. Indeed, one very recent prospective cohort study concluded that moderate wine intake was associated with 5 years longer life expectancy, most likely due to lowered cardiovascular mortality risk. Most studies of moderate wine consumption have focussed on cardiovascular diseases, but lately epidemiological studies have also suggested that moderate wine intake is linked to lower prevalence of haematologic malignancies, improves bone mineral density in older subjects, has positive effects on pulmonary function, shows beneficial effects on the immune system, but may increase the risk of certain cancers. However, some have suggested that the apparent effect of moderate wine consumption on cardiovascular health may be due to the fact that moderate wine drinkers may have a higher fruit, vegetables and whole grain intake and lower red meat consumption, the so called Mediterranean diet. These factors have to be taken in consideration as potential confounders in studies linking moderate wine intake to health. Experimental studies have suggested that these beneficial effects are due to the action of polyphenolic compounds present in wine (especially red wine) on lipid profile, hemostatic parameters, and reduction of inflammatory markers. One such polyphenolic compound, resveratrol, is attracting intense interest lately as resveratrol has antioxidant, antihypercholesterolemic, angiogenic and antidiabetic effects. Resveratrol thus may be a promising pharmacological agent in promoting cardioprotection against cardiovascular diseases. Resveratrol is already available in health food stores and is actively promoted to the public. However, I will continue to take my resveratrol intake in the natural way, namely in the pleasurable form of one or two glasses of red wine each day.

Core temperature changes in red cells removed from refrigerated storage
Holly Perry, P Prasad, S Kirwan, Y Huang. Auckland University of Technology, Auckland

Purpose: The 30-minute rule, whereby intact red cell products may be returned to stock if returned to 4 degrees C storage within 30 minutes of issue, was established many years ago. It was based on observations that units of whole blood, removed from storage temperature of 1- 6 degrees C, and left at room temperature, would reach a core temperature of 10 degrees C between 45 minutes and 1 hour1. Smaller volume red cell products are now in use. The study examined the current validity of the 30-minute rule.
Methods: 41 red cells resuspended leucocyte depleted and 8 paediatric red cells resuspended leucocyte depleted were subjected to exposure to ambient temperature for time intervals between one and sixty minutes. Core temperatures of all units were measured at one minute intervals.
Results: Red cells resuspended leucocyte depleted reached an average core temperature of 10 degrees C at 15 minutes, 12.7 degrees C at 30 minutes, and 15 degrees C at 60 minutes. Paediatric red cells reached an average core temperature of 12.8 degrees C at 15 minutes, 15.5 degrees C at 30 minutes, and 17.8 degrees C at 60 minutes.
Conclusion: In view of our results it may be timely for blood services to review the 30 minute rule.

Prevalance and antimicrobial susceptibility of extended spectrum beta lactamase-producing organisms in Fiji from 2006 to 2007
Manasa Mainaqelelevu, A D Gounder, Fiji School of Medicine, Suva

The prevalence and antimicrobial susceptibility pattern of ESBL producing Enterobacteriaceae in Colonial War Memorial Hospital

for year 2006 and 2007 was studied. A descriptive quantitative method of research was used where data collection was done from the microbiology laboratory of Colonial War Memorial Hospital. Data for *K. pneumonia*, *K. oxytoca*, *E. coli*, *E. coli* (in-active), *P. mirabilis*, and *C. diversus* producing ESBL was collected. These ESBL producing organisms belonged to blood culture, body fluid, cerebrospinal fluid, pus and wound, urine, and miscellaneous samples. For the year 2006 a total of 222 ESBL producing Enterobacteriaceae was identified. In 2007, 208 ESBL producers were identified. *K. pneumonia* had the highest prevalence in all the samples for both the years. In pus and wound it had prevalence of 17% in 2006 whereas in 2007 the prevalence was 9%. In 2007, ESBL producing *K. pneumonia* was the highest (n=62) in urine, with a prevalence of 18%. ESBL producing *E. coli* was isolated. Urine had a total of 9 and 17 ESBL producing *E. coli* for years 2006 and 2007 respectively. Most of the organisms had more than 90% susceptibility towards amikacin and meropenem but poor susceptibility was shown towards chloramphenicol, cephalothin in other gram negatives and nalidixic acid, nitrofurantoin in urine. Susceptibility to ciprofloxacin was above average in most of the organisms from different sample. The prevalence of ESBL producing Enterobacteriaceae is a serious concern. *Klebsiella pneumonia* is the most prevalent of the ESBL producing Enterobactericeae. Extensive use of antibiotics and infection control measures, prolonged hospital stay are some of the risk factors associated with this multi-resistant organism. Antibiotics with time are developing resistance and creating difficulties for physicians to treat patients.

Prevalence of specific IgE sensitization among 6-Year old children in New Zealand

Rob Siebers,K Wickens, P Lampshire, J Crane. Wellington Asthma Research Group, University of Otago, Wellington

Purpose: New Zealand has a high prevalence of asthma and allergic diseases. The aim of this study was to determine the prevalence of specific IgE sensitization in 6-year old children in New Zealand from an ongoing birth cohort.
Methods: Blood samples were obtained from 665 children at age 6 years and analyzed for specific IgE to 12 inhalant and food allergens by a liquid 3rd generation solid phase, two step, chemiluminescent immunoassay on an IMMULITE 2000 Analyzer (Siemens).
Results: Specific IgE sensitizations (> 0.35 KU/L) were as follows: D. pteronyssinus 26.6%, rye grass 21.4%, egg white 19.0%, cat 17.2%, dog 9.8%, peanut 5.2%, cockroach 4.6%, horse 4.1%, *Alternaria* 3.9%, cow's milk 3.2%, olive pollen 2.4%, and *Aspergillus* 1.8%. Between 3.0% to 19.0% of children had at least one measurable specific IgE of between 0.1 â€" 0.35 KU/L. In contrast to Wellington, significantly more children in Christchurch were sensitized to cat, horse, dog, rye grass, *Aspergillus*, and *Alternaria*.
Conclusions: This study has determined specific IgE sensitizations in a large cohort of 6-year old children in New Zealand with sensitization to house dust mite dominant. Of interest is the significant number of children with low specific Ige levels (0.1 â€" 0.35 KU/L) that would be classified as RAST Class 0 by 2nd generation assays.

Performance of next generation PR3-ANCA ELISAs

Matthew Hayman, C Slade, K Chamberlain, N Cook, M B Spellerberg, J L O'Donnell Canterbury Health Laboratories, Christchurch

Anti-neutrophil cytoplasmic antibodies (ANCA) are associated with systemic vasculitis. Current guidelines recommend ANCA detection by screening using indirect immunofluorescence (IIF) on a substrate of ethanol-fixed human neutrophils, with confirmation by ELISA. PR3-ANCA detection by ELISA ELISAs for PR3-ANCA detection take several formats Antigen may be bound directly to a microtitre plate or captured using a monoclonal antibody or other high affinity interaction. Enriched native antigen or recombinant (or a mixture) may be used. Each setup suffers limitations which in turn affect assay performance and clinical utility.
Findings

- The two best performing PR3-ELISAs are capture ELISAs
- Assays incorporating recombinant PR3 perform as well as those using native PR3
- Better performing ELISAs discriminate 'false positive' samples (but don't necessarily detect PR3-ANCA titre increases earlier)

A rare case of pure dup (3q) syndrome

Monique Robertson, B Telford-Herdman, A Kidd, F Rynne, V Velkoska-Ivanova, J C Taylor. Canterbury Health Laboratories, Christchurch

Duplication 3q syndrome
Minimal critical region is 3q26.3
Pure duplications are rare
Most cases are the result of an unbalanced translocation, and usually have partial trisomy of 3q and partial monosomy of another chromosome region. Typical clinical features:

- Dysmorphism including broad nasal root, anteverted nares, down turned corners of mouth, hirsutism, synophris and low set ears
- Congenital heart defects, genito-urinary defects, hand and feet malformations, mental and growth retardation Our case
- Small duplication including the 3q duplication syndrome critical region
- Milder phenotype, other cases with a larger duplication have a congenital heart defect
- Pure duplication of chromosome 3, therefore concomitant imbalance of another chromosome region has not contributed to the clinical features

Comparison of a commercial multiplexed tandem PCR (MT-PCR) system with classical virology techniques for screening clinical specimens for respiratory viruses

Kevin Barratt, S Mai, L Jennings. Canterbury Health Laboratories, Christchurch

The strength of classical viral culture techniques are that with a range of 4 or 5 cell lines one can screen for several types of respiratory virus at once. MT-PCR detected a wider range of respiratory pathogens than the current viral culture methods which lack sensitivity for detecting human rhinoviruses and human metapneumovirus (MPMV). A significant number of human rhinoviruses were detected only by MT-PCR. Human rhinoviruses cause significant disease. Complications of rhinoviral infections include otitis media, sinusitis, chronic bronchitis, and exacerbations of reactive airway disease in children and adults. These viruses are involved in lower respiratory tract infections in elderly persons, infants, persons with cystic fibrosis, and immunosuppressed patients. HMPV accounts for up to 10% of unexplained respiratory infections in children. HMPV was originally described in 6-to 12- month-old infants from the Netherlands with respiratory infections. Evidence suggests that virtually all children in the Netherlands are exposed by the age of 5 years and that the virus has been circulating for more than 50 years in humans. Little is known about this virus in New Zealand. One Easyplex MT-PCR system can screen 8 samples every 4 hours for 8 respiratory viruses so the results are available in a timely manner. Viral culture may take weeks to complete by which time the results are not useful for patient management. The system is at least as sensitive as viral culture and can detect non-viable viruses and viruses that will not grow or grow poorly in tissue culture. MT-PCR shows great promise as a diagnostic tool to replace tissue culture for respiratory viral screening.

Resolution of a CVS case of mixed sex
Jane Watt, T Raizis, F Rynne, A Fellowes, J Taylor. Canterbury Health Laboratories, Christchurch

Introduction: Prenatally detected 46,XX/46,XY usually represents pseudomosaicism, most often as a result of maternal cell contamination (MCC) of a 46,XY chorionic villus specimen, (CVS) but can be due to a vanished twin, or a cross-contamination of the twin specimens at sampling or during laboratory processing. True 46,XX/46,XY chimerism is a rare outcome and can have clinical significance. We present the cytogenetic and molecular genetic analysis of a case of mixed sex detected in a CVS from a twin pregnancy and propose a mechanism for our findings.
Conclusions:

- The 46,XX/46,XY karyotype of twin 2 represents a female fetus with contaminating male cells from twin 1
- The CVS specimen from twin 2 was most likely contaminated during the biopsy procedure
- Sampling of male cells from a 'vanished triplet' – a monozygotic twin of twin 1 – is a theoretical alternative explanation
- It is important to fully investigate such cases because of implications for misdiagnosis
- This case emphasises the importance of ensuring villus material for rapid screening FISH/QF-PCR is derived from multiple placental sites to minimise misdiagnosis

Association of respiratory virus activity, metrological factors and air pollution with the incidence rate of invasive pneumococcal disease in Christchurch, New Zealand
Lance Jennings, D R Murdoch. Canterbury DHB, Christchurch

Background: In temperate climates, rates of invasive pneumococcal disease (IPD) show seasonal fluctuations, with peak incidence in winter. Respiratory virus activity and environmental factors have been suggested as possible reasons for this variation.
Objective: To correlate the incidence rate of IPD with fluctuations in respiratory virus activity, meteorologic variables and air pollution in the city of Christchurch, New Zealand over a 12-year period.
Conclusions: Incidence rates of IPD are associated with the increased activity of some respiratory viruses and air pollution in Christchurch and confirm the findings from other temperate regions. Further research should also include data on other respiratory viruses (such as rhinoviruses) and tropical climates.

A comparison of blood film comments between cellavision DM 96 and conventional microscopy
Linda Henshaw, G Scott. Canterbury Health Laboratories, Christchurch

Introduction: CellaVision DM 96 is an automated digital cell image and analysis system that has the ability to locate and classify white blood cells and precharacterise red blood cells on a peripheral blood smear. Images are captured using an Olympus digital microscope mounted with a digital camera. The white cells are photographed at 100 times magnification and preclassified using a trained artificial neural network. Red cells are photographed and the images stitched together to give a viewing area equivalent to eight microscopic high power fields (100 times objective)
Conclusions: Normal films and white cell changes can be reported confidently using CellaVision without microscopic review. CellaVision performs better than conventional microscopy to identify toxic changes in white cells. Abnormal RBC changes may require a microscopic review, at the operator's discretion. Features which are found often only after scanning the whole blood film may require a microscopic review. Future enhanced software changes enabling full slide viewing, including the tail, will improve technique agreement.

A case of pseudo von Willebrand disease
David Patterson, A Denholm, M Smith. Canterbury Health Laboratories, Christchurch

This case study highlights the need that if a patient presents with a functional vWF discordance and enhanced response to low concentration Ristocetin in RIPA testing, a diagnosis of type 2B vWD should not be automatically assumed. Further testing by RIPA mixing studies and appropriately targeted gene mutation study is necessary for correct diagnosis.

Detection of SCC mec elements amongst invasive *Staphylococcus aureus* isolates from Canterbury, New Zealand
Trevor Anderson, P Huggan, S Chambers, A Werno, D Murdoch. Canterbury Health Laboratories, Christchurch

Rationale:

- SCCmec is a mobile genetic element containing mecA, a gene encoding a penicillin binding protein (PBP2a) of reduced affinity to beta-lactam antibiotics
- MRSA originates from the insertion of SCCmec into MSSA strains
- MSSA strains can still contain SCCmec sequences either because of deletions affecting the mec gene or the presence of primitive SCC elements not encoding PBP2a.
- High rates of false positivity were noted during the evaluation phase of a SRE/orfX PCR for detection of MRSA from nasal swabs.
- We postulate the integration of non-functional SCCmec variants amongst invasive MSSA and PSSA in our region.

Discussion:

- Deletion of mecA from the SCC gene complex has been documented amongst clinical isolates and in vitro following prolonged cultivation or storage of MRSA, culture at elevated temperatures or exposure to UV radiation.
- This is the first evidence, to our knowledge, of widespread integration of SCCmec elements into invasive multi-susceptible strains of S. aureus
- mecA deletion does not explain persistence of high level susceptibility to other antibiotic classes
- Whilst New Zealand benefits from strict and aggressive infection control protocols for the prevention of MRSA transmission, local molecular epidemiology may have contributed to the success of this strategy

A formal qualification programme for medical laboratory technologists in Pacific island countries
Philip Wakem, J Elliot, C Story, R Siebers. Pacific Paramedical Training Centre, Wellington

Objective: Apart from that of the Fiji School of Medicine, no formal qualification programmes exists for medical laboratory technologists (MLTs) in Pacific Island Countries. The Pacific Paramedical Training Centre (PPTC) developed a distance learning course leading to a basic Diploma in Medical Laboratory Technology (PPTC). In this poster we present the course structure and results of the 1st round.
Methods: In 2005 following discussions with WHO, the PPTC was contracted to prepare initial courses in medical laboratory technology for delivery through the Pacific Open Learning Health Network (POHLN). During 2006 and 2007 the PPTC developed 5 modules in the laboratory sciences of biochemistry, haematology, transfusion science, microbiology, and immunology. These modules were progressively introduced between 2006 and 2008 and a large number of Pacific Island Countries MLTs commenced one or more of these modules. At the end of each module, successful students were awarded a certificate of success in that topic and MLTs who successfully completed all 5 modules were awarded the Diploma in Medical Laboratory Technology (PPTC).
Results: By 2008 a number of MLTs had successfully completed modules for biochemistry (43), haematology (41), transfusion science (43), microbiology (33), and immunology (41), with 16 MLTs successfully completing all 5 modules and awarded the Diploma.
Conclusions: A formal qualification has successfully been implemented for MLTs in Pacific Island Countries at no cost to students. Benefits of this training programme include improved quality of laboratory diagnostic services and recognition of MLTs for career advancement. Future improvements include laboratory work books and more advanced modules.

The effect of different decalcification fluids on common immunohistochemical methods used in bone marrow diagnosis
Hongmei Mao, LabPLUS, Auckland

Purpose: This study was designed to compare the effect of three different decalcification fluids on common Immunohistochemical (IHC) tests of bone marrow. This was followed by the selection of the optimum decalcification fluid for routine histology work on bone marrow. Animal bone marrow tissue was used in this study.
Methods: Common in-house produced 10% Formic acid and two commercial decalcification fluids OSTEOMOLL and FASTCAL were used for decalcification of 10% Neutral Buffered Formalin (NBF) fixed pig rib. CD3, CD20 and other common IHC tests for bone marrow were performed on Bond Max auto IHC stainers.
Results: All the specimens decalcified exhibited various degrees of staining. The staining quality of specimens decalcified using FASTCAL was the best of the solutions under review.
Conclusions: From the test results FASTCAL would be more suitable for routine decalcification of Bone Marrow. It is recommended that further investigations should be carried out on human bone samples.
References

1. Histology methods for assessment of bone. Maurice Adkins. THE BIOMEDICAL SCIENTIST February 2005.
2. Effects of Fixation and Decalcification on Kappa and Lambda Staining by Immunohistochemistry. Tanya wing-Finchem. HISTOLOGIC Vol. XLI, No. 1 May 2008.
3. _____

Soy phytoestrogens alter lipoprotein profiles in human apolipoprotein transgenic mice
Mike Legge, C Y-Y Liu, E Cheeseman, S McCormick. University of Otago, Dunedin

Purpose: To determine the effect of phytoestrogens on plasma lipoproteins using a transgenic mouse model for human apoB.
Methods: Control and transgenic mice were fed phytoestrogen rich and phytoestrogen poor diets and their LDL and HDL fractions were analyzed using liquid chromatography.
Results: The transgenic mice expressed a lipoprotein profile of high LDL and low LDL. However in the transgenic mice fed the high phytoestrogen diet the plasma lipoprotein profile shifted to an anti-atherogenic profile with low LDL and high HDL.
Conclusion: In this mouse model of human heart disease it was possible to modify the atherogenic lipoprotein profile to a more favourable profile using dietary manipulation.

Accuracy of predictive equations for estimating resting metabolic rate (RMR) in overweight women
Mike Legge, L Jones. University of Otago, Dunedin

Purpose: Resting Metabolic Rate (RMR) is frequently used in a clinical setting to determine daily energy intake. This can be determined using indirect calorimetry (gold standard) or indirectly using a variety of equations. We have investigated the accuracy of the equations against indirect calorimetry.
Methods: RMR was measured in 34 overweight women (BMI>25 kg/m2) by indirect calorimetry and compared with four commonly used equations.
Results: All predications using equations failed to reliably predict RMR with the most commonly used equation (Harris-Benedict) performing the worst.
Conclusions: All equations give poor predictions when compared with indirect calorimetry. Use of these equations may lead to chronic positive energy balance.

New products and services

Panasonic enters healthcare market with purpose-built Mobile Clinical Assistant for the New Zealand Healthcare Industry

Toughbook CF-H1 set to revolutionise Healthcare in New Zealand
To improve patient care and help to reduce the rate of errors, Panasonic has launched its first Mobile Clinical Assistant (MCA) – the Toughbook CF-H1. The newest member of Panasonic's renowned Toughbook family of ruggedised mobile computing products, the Toughbook CF-H1 provides the healthcare profession with a full-featured mobile device that can withstand the rigours of a fast-paced healthcare environment, while offering improvements in workflow productivity, quality and mobility, all combining to achieve better outcomes for patients. The CF-H1 has been designed in response to the needs of healthcare professionals, and Panasonic sought feedback from clinicians in all elements of research and development.

Built from the ground up, the CF-H1 has been designed to address the computing challenges that face the medical profession. Mobile Clinical Assistants (MCAs) allow healthcare professionals to access and update medical records and critical information live at the patient's bedside. The proven benefit of an MCA is improved staff productivity, as valuable time with the patient is maximised instead of them searching through paper records, while easy access to critical information means errors can be reduced.

Panasonic's CF-H1 MCA is a highly-durable solution. Its lightweight, ergonomic and rugged design means it will survive the knocks, bumps and drops that often occur in a busy medical environment. With a fanless design and no open ports, it can be easily and safely sanitised with hospital-grade disinfectant, reducing the spread of infection. Long battery life and dual hot-swappable batteries means the CF-H1 is always working, so healthcare professionals have continuous access to critical information.

According to Steve Munns, Toughbook Business Development Manager for Panasonic New Zealand, the MCA is fast becoming an essential tool for the healthcare industry. *"In a high-pressured environment where speed and access to information is key to delivering quality patient care and overall staff productivity, a hard-working, reliable mobile IT solution is vital".*

"Panasonic considered every need and feature requirement when designing the Toughbook CF-H1, incorporating feedback from many experienced healthcare professionals. The result is a durable, lightweight solution that is fully-featured, advanced and intuitive to operate".

"Panasonic has a long and proud heritage in building rugged mobile computing solutions for a wide range of industries. Panasonic now brings its expertise to the healthcare market, and has developed a solution in conjunction with medical professionals that will really assist the industry, overcoming many challenges and increasing patient care standards".

Steve continued "*The Toughbook CF-H1 joins an already established family of reliable mobile devices designed for various applications and needs*".

Engineered for the medical profession
The CF-H1 features a number of smart functions to maximise time spent with patients and improve workflow. When using the CF-H1 MCA, a nurse or clinician can log on via the contactless smart card reader or fingerprint reader to ensure secure access to confidential patient records at all times.

An integrated RFID reader and barcode scanner allows fast, accurate access to the patient's full medical records, simply by scanning a patient's barcode at their bedside, or on their wrist. This can help to reduce medication administration errors and deliver faster, safer patient care.

An integrated 2.0 megapixel auto-focus camera with dual LED lights allows users to capture images to add to a patient's file. Photos of wounds or symptoms can then be sent electronically for further diagnosis to other professionals or monitored during healing and recovery. The 10.4 inch XGA sunlight viewable LCD screen is clear and easy to see.

Integrating the low-power consumption Intel® Atom™ processor the CF-H1 offers an industry-leading six hour battery life. Dual hot-swappable batteries offer non-stop access as batteries can be changed without losing power, eliminating down time and ensuring the ever-reliable CF-H1 is ready to go when you are.

Clean design
The Toughbook CF-H1 has been designed for easy disinfection. It is the first MCA to offer a fanless design, and features a smooth, chemically-resistant surface, sealed buttons, a gapless LCD and no exposed ports. In addition, a Panasonic-designed software utility can be programmed to remind users to wipe the unit down at certain intervals. The device automatically tracks this for the medical facility's permanent records.

Built with inside-out durability
Panasonic prides itself on manufacturing the most reliable mobile devices, to ensure practitioners can depend on their device. The fully rugged CF-H1 meets stringent military-specification (MIL-STD-810F), and is capable of withstanding a drop of 90cm – similar to the height of a patient's bed. It is moisture and dust resistant, and can be sprayed and wiped repeatedly with chemicals without affecting its operation. In addition the CF-H1 is backed by Panasonic's industry-leading three year warranty.

Improved ergonomics and connectivity
As a mobile tool, the CF-H1 is designed to be carried, so portability and ergonomic-usability is paramount. The CF-H1 is compact, lightweight (weighing 1.5kg), produces low heat during operation, and features a specially-designed integrated hand strap for improved comfort while on the move. In addition the CF-H1 has an integrated easel footing so it can sit upright on a trolley, bedside table or desk.

To meet the needs of the increasingly mobile healthcare industry, including aged care and in-home visits, the CF-H1 offers a range of embedded wireless options including 802.11a/b/g/ draft-n and Bluetooth® 2.0. The device also ships (as an integrated option) Qualcomm's new Gobi™ technology, offering up to 7.2 Mbps mobile data links and simplifying complex multi-carrier wireless deployments for IT departments. It allows healthcare professionals to access information from 98% of locations within New Zealand. The CF-H1 also comes with optional, GPS technology allowing for location awareness with improved accuracy, faster satellite acquisition time and lower power consumption. The CF-H1 also comes with optional embedded 3G and GPS allowing for always-on connectivity and improved location accuracy.

Panasonic Toughbook CF-H1 Features
- Genuine Windows Vista / Windows XP Tablet with SP3 (Downgrade)
- Intel Atom Processor (1.86GHz)
- 1GB Standard Memory
- 80Gb 1.8" Shock Mounted Hard Drive
- 10.4" XGA Sunlight Viewable LCD Display

- Integrated 2.0 Megapixel Camera With Dual LED Lights
- Fingerprint Scanner
- Contactless Smartcard Reader
- Alcohol Wipe Resistant Casing
- RF-ID Reader
- Fully Rugged :
    - MIL STD-810 and IP54 Compliant (In Some Environments IP65 Compliant)
    - 3 Foot Drop Approved
    - Magnesium Alloy Chassis
    - Sealed All-Weather Design
    - Rain-Spill, Dust and Vibration-Resistant
- Intel WiFi Link 5100 802.11a/b/g/draft-n
- Bluetooth v2.0 + EDR
- Optional Integrated Docking Connector
- Optional Integrated Accessories :
    - Optional GOBI™-enabled HSPA 7.2 Mbps 3G Mobile Broadband GPS
    - 2D Barcode Reader

For more information contact Panasonic on 0800TOUGHBOOK or visit www.toughbook.panasonic.co.nz

About Panasonic Toughbooks
Panasonic Toughbooks are used extensively worldwide by the military, utilities, heavy industry, emergency services, field workers, mobile professionals and organisations where durable mobile computing is critical to maximising productivity and uptime. In New Zealand, Panasonic Toughbook clients include Coca-Cola Amatil, New Zealand Automobile Association (AA), Team New Zealand, New Zealand Police, Nissan, Emirates, New Zealand Steel and the Auckland Regional Council.

Life membership awarded to Fran van Til

As president I have had the privilege over the last three years to perform a number of pleasurable tasks on behalf of the Institute. However, the announcement that I am about to make will be a particular highlight.

From time to time Council sees fit to bestow life membership on a member of the Institute in recognition of meritorious service. The membership rules of the Institute define a life member as any member whom the Council considers has given outstanding service to the Institute and the profession of Medical Laboratory Science, or any other person that Council deems appropriate. Under normal circumstances, a recipient of life membership would be notified of the award in advance of conference. However, while Council is unanimous in the choice of this year's recipient, on this occasion the award has not been announced at a Council meeting and the recipient is unaware of the honour. It gives me great pleasure to announce that Council has chosen to award life membership to Fran van Til, our Executive Officer.

Those of us who have some longevity in the profession will recall that, for many years, the secretarial functions of the Institute were run by Barrie Edwards from his office in Christchurch Hospital. However, the history of the Institute, published in 1996, records that in August 1990 an Executive Assistant was appointed as an employee of the Institute, predominantly to act as secretarial support to the Secretary and other members of Council. I have it on good authority that at the time Fran was on maternity leave from a position as a highly regarded Personal Assistant at Waitaki International. While on leave the company was bought out and Barrie became aware of Fran's availability. It was thus that Fran began her association with the Institute that has now spanned almost twenty years. Towards the end of 1990 Barrie resigned as Secretary/Treasurer and Fran's position became that of Executive Officer. Fran's initial contract was for 10 hours per week, and involved working from the back of the family lounge. The supplied equipment consisted of a wooden desk, 3-drawer filing cabinet, fax machine and a Commodore computer. A far cry from the impressive office space and state of the art technology that currently constitutes the NZIMLS executive office.

Fran's hours increased over the years to match the increase in workload associated with the day to day running of the Institute's affairs. Since 2004, the requirements of the HPCA Act have placed an additional and very significant workload on the executive Office. In particular the introduction of the CPD programme and the increased number of QMLT and QPT examination candidates. In 2006 a review of the Executive Office was undertaken and Fran became a fulltime employee of the Institute, with responsibility for managing an increased staff establishment. At the same time, the responsibility for running the Institute's Annual Scientific meeting and SIG seminars was incorporated into Fran's role. This had previously been contracted to e.events.

To members, Fran and the Institute have become synonymous, and for almost 20 years Fran has very much been the face of the Institute. Every member of the Institute would at some time have had contact with Fran. Be it in relation to membership, examinations, registration for a scientific meeting or other professional activities. Significantly, Fran's continuity in the Executive Officer role has meant a huge store of institutional knowledge and this has been to the considerable benefit of Institute members. Over the years Councilors have highly valued Fran's organisational abilities, professional approach and wealth of knowledge.

The Institute has also benefited enormously from the expert approach that Fran has brought to the Annual Scientific meeting, and this year's conference again bears testament to that. Importantly, her management skills have allowed the organising committees to concentrate on the development of the scientific programme, without the problems of having to attend to the organisational matters around speakers, accommodation and registrations. While it is not anticipated that every conference will result in a profit, under Fran's guidance recent conferences have indeed returned healthy profits and Council has been able to use this revenue to invest in the financial surety of the Institute, as well as enhance the benefits for members and also, importantly, promote the profession.

Fran has always maintained a highly professional approach to all of her duties and particularly in her contacts with members and the other professional bodies with which the Institute has relationships. Fran's considerable skills are well recognised outside the realms of the Institute, and I am sure that if you were to ask her she would tell you of the occasion when she was called upon to take the minutes at an MLSB Board meeting. Also, Fran's excellent relationship with the industry sponsors and exhibitors prompted the Australian Institute to ask her to organise the 2003 South Pacific Congress held on the Gold Coast. The resulting conference was the first AIMS ASM in many years to return a profit.

I know that all present here today, will agree that Fran has been a loyal servant of the Institute, and that it is highly appropriate that this be recognised through the award of life membership. Please join with me in congratulating Fran on the receipt of life membership of the Institute.

Robin Allen

Current Life Members of the NZIMLS

Colvin Campbell	Desmond Philip
Warren Dellow	Dennis Reilly
Shirley Gainsford	Trevor Rollinson
Michael Lynch	Gilbert Rose
Brian Main	Walter Wilson
Paul McLeod	Marilyn Eales
Kevin McLoughlin	Ron Mackenzie
Albert Nixon	Rob Siebers
Jan Parker	Fran van Til

Obituary - Marcella Margaret Jackson 1955 - 2009

Some people come into our lives and quickly go.
Some stay for awhile and leave footprints on our hearts.
And we are never, ever the same.

On Saturday the 11th of July 2009, two friends set off from Otaki Forks to walk to Kime Hutt in the Tararua Ranges. One was Seddon Bennington, CEO of TePapa, a well known public figure; the other was a very private individual, someone who would have been horrified at the subsequent media coverage and fuss! Her name is Marcella Jackson and this is a glimpse of her life story.

Marcella grew up in rural Wairarapa with her Mum, Dad and younger brother, Freeman. She had a love of nature from an early age and after completing her secondary education at Kuranui College, where she was Head Girl, she went to Canterbury University to study Science. Known as "Rosie" to her many friends, while at university she met the love of her life, Rob Ogilvie, who died, sadly, in 2003. The friendships from that time endured and flourished, nurtured by Rosie's generous hospitality, her vitality and genuine interest in people. Out-of-town friends and their families made 55 Pirie Street a very busy and popular Wellington destination.

Marcella began working at Wellington Hospital in May 1982 under a PEP scheme, became a permanent employee in the Biochemistry Department in January 1983 and went on to gain her Certificate and Specialist Level certificates in Chemical Pathology. In 1991 she attained the level of Grade 3 Laboratory Officer - Miscellaneous Section. Her conscientiousness and attention to detail are legendary, as are the hours she was prepared to work in order to ensure that her results were absolutely right.

Marcella loved working in Newtown. She liked nothing better than trawling through second hand shops and wreckers' yards searching for treasures which would eventually find a place in the Mt. Victoria heritage home that she and Rob painstakingly restored to its original condition. Antique porcelain toilets, light switches and pressed tin ceilings all found their way into Marcella's various storage holds, much to her laboratory colleagues' amusement and the admiration of the local heritage architect.

In August 1997 Marcella took voluntary severance from Wellington Hospital; this afforded her time to care for her sick mother and continue the refurbishment of her much-loved home. During this time she was persuaded to take up some hours at ESR, performing workplace drug testing, as well as some hours at Wellington Medical Laboratory. Later, after the merger with Valley Diagnostics in 2006, Marcella took on the role of Quality Control officer in the biochemistry department of the new Aotea Pathology.

Marcella had a remarkable gift for friendship, finding it easy to engage with young and old in a caring and generous way. Infinitely patient with students and new staff she was a much valued teacher, drawing on her many years of experience. As a medical laboratory scientist Marcella was totally committed to getting the very best outcome for the patient at every step of the way, from quality control to communicating the final result; a consummate professional and mentor to us all.

We will always remember Marcella's passion for fine food and her wonderful hospitality. She was a keen and successful gardener and an enthusiastic hunter/gatherer, especially on the West Coast in the whitebait season.

Thank you Marcella for being part of our lives. We'll miss your beautiful smile, your warmth and your kindness. You've left a huge hole in our world.

***M**iss Marcella Margaret, Moore Wilson's best customer*
***A**t sixes and sevens with pureness of heart*
***R**osie to others, and Rob's dearest love*
***C**autious, careful and unpretentious, but caring most of all*
***E**ntertaining friends with fine wine and food*
***L**eisurely coffee and Lager at Beer O'clock were her guilty pleasures*
***L**oyal, honest, constant and endlessly patient*
***A** connoisseur of the beautiful and precious things of life*

Contributed by Kim Allen, Aotea Pathology, Wellington

New Zealand Institute of
Medical Laboratory Science

Twenty First Annual - Nice Weekend

Date: 30 April – 2 May 2010
A Transfusion Science Educational Opportunity

Location: Bayview Wairakei Resort
Organised by the NZIMLS TSSIG

The NICE Weekend (National Immunohaematology Continuing Education) is an educational meeting for all people working in Immunohaematology and/or blood services. As usual it will be held at the Bayview Wairakei Resort Hotel. Registration starts 5pm Friday evening. NICE Weekend finishes approx. 2.00pm Sunday.

As always, all Scientific Delegates are required to participate. They must present either a poster, or an oral presentation lasting 2 to 5 minutes, on **any topic related to Immunohaematology or blood transfusion.** It can be a case study, a discussion, a question, a problem for others' to solve, etc. This will be followed by questions and discussion of the topic raised. This compulsory participation makes everyone nervous (yes, even the "old hands") but it really is one of the reasons why the NICE Weekend is so successful.

There are awards, supplied by trades companies, for the best presentation and poster. We also like to distribute CDs with all the weekends power point presentations and posters to delegates who attend. If you would like to contribute an award, or sponsor CDs please contact Raewyn Cameron or Diane Whitehead.

Coming along and showing your support for NICE Weekend is very much appreciated and it's a great opportunity to meet all sorts of people from all over NZ in the Transfusion Medicine Industry.

Registration Fees

The registration fee is $450, reduced to $400 for current financial members of the NZIMLS. Your registration fee entitles you to:

- two nights (Friday 30th April and Saturday 1st May) accommodation on a twin share basis (single room extra)
- breakfast, morning and afternoon teas, and lunches on Saturday and Sunday
- dinner & disco on Saturday night. (Dress theme is "B_____ B_____"'- generally everyone dresses up)
- Friday night NICE games – a fun night.

Accommodation

Accommodation is on a twin-share basis. You will be sharing a room with another attending delegate (same sex of course!). You may specify who you would like to share with if you wish to catch up with old friends. If you do not specify anyone, the organising team will endeavour to room you with another delegate from a similar sized site or within your own region. The idea is to meet other blood bankers and maybe make a new blood bank friend.

If you are not comfortable with sharing you may choose to pay the extra $140 single room surcharge.
(PLEASE NOTE: If this is your choice it will also be your cost. Employers do not usually pay this unless you have come to some arrangement.)

Accommodation on other nights can be arranged by Raewyn or Diane to get the discounted NICE weekend rate at Bayview Wairakei Resort.

User Groups

User Groups are usually held on the Friday prior to NICE weekend. We have already had confirmation from DiaMed NZ and Ortho Clinical Diagnostics that they will be holding these in 2010. You may wish to organise your travel and leave days around these. They will all be held on site at Bayview Wairakei. These are organised through the individual companies and not by NICE team. Please contact them directly for further information. We, the coconveners do usually know what's going on though and may be able to help you.

Transport costs will be your own responsibility.

Please plan to arrive at the venue on Friday evening, as we have a full programme planned.

Trade representatives

Company representatives do attend our NICE weekend (they have to pay just like you!) as they have a vested interest in keeping up with the world of transfusion. They are not required to present but are around for the weekend – so make yourself known to them. They are a vital part of NICE weekend's sponsorship (keeping your prices down) and are also a lot of fun!

NICE first timers

If this is your first NICE Weekend, we will introduce you to everyone, explain anything you don't understand and make you feel at home. We will try to room you with someone who has been before to help you along.

Registration Notification
You will be notified and sent any further information when your registration has been received. If you don't hear from us we have not heard from you.

Please send registrations in by 19th March 2010.

Please forward completed registration form, with payment to: NZIMLS, PO Box 505, Rangiora. If paying by Credit Card, delegates can either choose to mail this form, or fax to 03 313 2098.
Please email your abstract and presentation information form to: raewyn.cameron@lsr.net.nz or fax to 07 349 7896.

If you have any questions contact the co convenors

Raewyn Cameron (Rotorua)
07 349 7908
027 418 0592
Raewyn.cameron@lsr.net.nz

Diane Whitehead (Christchurch)
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New Zealand Institute of
Medical Laboratory Science

NZIMLS Annual Scientific Meeting
Bay of Islands, Northland 2010

The Diversity of Pathology

NZIMLS / NZSC Annual Scientific Meeting
Copthorne Hotel & Resort Paihia, Bay of Islands, 23-27 August 2010

- Set in the historic Bay of Islands
- Free buses Monday and Tuesday from Auckland to Paihia via the magical Waipoua Forest Conservation Estate to see the famous "Tane Mahuta" (Lord of the Forest), New Zealand's largest known living kauri tree. Returning Friday.
- Workshops Tuesday 23rd August
- Plenary plus concurrent sessions Wednesday 24th – Friday 27th
- Proffered papers wanted!
- For further information contact Ross Hewett at LabPLUS, Auckland City Hospital or on rossh@adhb.govt.nz

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