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MEDICAL LABORATORY SCIENCE

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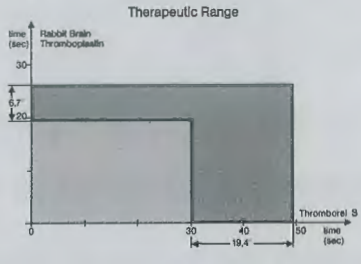

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NEW ZEALAND JOURNAL OF
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Original Articles

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DIRECTIONS FOR CONTRIBUTORS

From Vol. 36 No. 1 all papers published will be in the form known as "Vancouver Style" or Uniform Requirements for Manuscripts submitted to Biomedical Journals. Full details may be found in the New Zealand Journal of Medical Laboratory Technology, Vol. 42 No. 2, page 54 to 60 or from the Editor.

Intending contributors should submit their material to the Editor, M. Gillies, Microbiology Laboratory, Princess Mary Hospital, Auckland, New Zealand, or the Editor, P.O. Box 9095, Newmarket, Auckland, New Zealand. Acceptance is at the discretion of the Editor, and no undertaking is given that any article will be published in a particular issue. The copy deadline for each issue is the first of the month prior to the month of publication.

ADVERTISER INQUIRIES

Inquiries regarding advertising rates and copy or blocks for advertising should be addressed to the Advertising Manager, Trish Reilly, M.N.Z.I.M.L.S., 48 Towai St, St Heliers, Auckland 5, Phone 555-057.

DATES OF PUBLICATION

The months of publication for 1991 are March, May, August and November.

This Journal is abstracted by: Biological Abstracts, Chemical Abstracts, Cumulative Index to Nursing & Allied Health Literature, Current Clinical Chemistry, Hospital Abstracts, Institutnautchnoi informatsii.

3RD SOUTH PACIFIC CONGRESS ON MEDICAL LABORATORY SCIENCE

AUGUST 26 – 30, 1991
Auckland, New Zealand

Invitation to attend

It is my very great pleasure, on behalf of the organising committee, to invite you to the 3rd South Pacific Congress in Auckland from 26th to 30th August 1991.

This meeting is the joint annual scientific meeting of NZIMLS and AIMLS and for this congress we have been joined by the NZ Society of Haematology. As you can see from the outlined programme, there is a wide variety of scientific and social activities. We have a world acclaimed venue, speakers of the highest calibre and a social programme to satisfy the most avid conference goer.

To make this Congress a success all that is needed is your participation. Fill out the attached registration form and return it as soon as possible.

I look forward to meeting you in Auckland, August 26 – 30th 1991.

Dennis Dixon–McIver
Chairman, Organising Committee
3rd South Pacific Congress

Tentative Programme

Monday 26 August
- Continuing Education Seminar in conjunction with the Society of Haematology – *Update on Acute Leukaemia* – Auckland Hospital.
- Workshops and User Group meetings.

Tuesday 27 August
- Continuing Education Seminar in conjunction with the Society of Haematology – *Update on Acute Leukaemia (continued), Impact of Haemopoietic Growth Factors in Clinical Haematology* – Auckland Hospital.
- Immunohaematology workshop on *Diagnosis of Autoimmune Haemolytic Anaemia* – Dr Lawrence Petz.
- Workshops and User Group meetings.
- NZIMLS Annual General Meeting (afternoon).
- Icebreaker wine and cheese (evening).

Wednesday 28 August
- South Pacific Congress on Medical Laboratory Science – Opening Ceremony and Address.
- *Evolution of M.L.T. in Developing Countries* (Monica Cheesbrough).
- General Forum on *Medical Ethics.*
- Concurrent Fora
  : Biochemistry : Haematology
  : Immunology : Microbiology
  : Histopathology : Radioassay (Dr Jan Stockigt)
- Evening meal and entertainment – NZ Expo Centre.

Thursday 29 August
- Plenary Session – *AIDS* – Prof. D Sutherland (WHO), Prof. Ron Penny (Australia)
- Concurrent Fora
  : Haematology (Dr Ken Bradstock, Dr A H Goldstone)
  : Immunology
  : Immunohaematology (Dr Lawrence Petz)
  : Biochemistry (Dr Garth Cooper)
  : Education (Peter Bruhn)
  : Microbiology
- Conference Dinner

Friday 30 August
- Plenary Session – *Molecular Biology* – Dr Tom Gillis.
- South Pacific Forum examining the problems and progress of M.L.T. in the Pacific Islands.
- Concurrent Fora
  : Microbiology : Biochemistry
  : Immunohaematology : Haematology
  : Management : Immunology
- Closing Ceremony

3RD SOUTH PACIFIC CONGRESS ON MEDICAL LABORATORY SCIENCE

AUGUST 26 - 30 1991, AUCKLAND, NEW ZEALAND

- CALL FOR ABSTRACTS -

Please complete the following questionnaire:

Title of Paper .....

.....

Presenter (Title, First Name, Surname) .....

Name and Address for correspondence .....

.....

.....

Preferred method for Presentation : Oral presentation ☐

Poster Display ☐

(N.B. The Organising Committee reserves the right to determine the most appropriate means of presentation)

Visual Aids required (e.g. 35mm Slide Projector, Overhead

Projector .....

.....

(Wherever possible, slides should be used in preference to overhead transparencies to assist in presentation. As a general rule, a slide should not have more than 7 lines of text, nor more than 7 words per line. White lettering on a blue background is the industry standard. Remember - simple slides create interest, cluttered slides can distract or even irritate the audience).

PLEASE FORWARD YOUR ABSTRACT **NO LATER THAN 30 MAY 1991** TO:

Mr I Green
Convener, Scientific Subcommittee
Dept. Clinical Chemistry
Auckland Hospital
Private Bag
Auckland

INSTRUCTIONS ON CONTENT:

The abstract should be informative, containing:

a) the study's objectives (unless given in the title),
b) a brief statement of methods used, if pertinent,
c) a summary of the results, and
d) the conclusion.
e) Tables and figures are permitted, but within the space allocated.

TYPING INSTRUCTIONS:

1. Print size is to be Elite type (12 characters to the inch). If using a dot matrix printer, 24-pin letter quality is required. Use single line spacing.
2. Type wholly within the blue box. Practice typing or printing on a rectangle 125 mm x 160 mm before using the space below.
3. Title must be in Capitals and at the top of the extract.
4. All authors should be listed, with the presenting authors name underlined.
5. The authors' names should be followed by the full postal address.
6. Standard abbreviations may be used. Special or unusual abbreviations must be placed in parentheses after the first use of the full word.
7. Any special symbols, such as Greek letters, that are not on the keyboard, must be drawn by hand in black ink.
8. Remember that the abstract will appear in print exactly as you submit it. Any typographical errors or misspelling will be glaringly apparent in the published abstract.

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY EXCLUDE YOUR ABSTRACT FROM CONSIDERATION

DO NOT TYPE ON PAST BLUE LINES. FOLD CAREFULLY TO POST SO NO CREASES APPEAR WITHIN BLUE BOX.

SOCIAL PROGRAMME

Icebreaker – Tuesday 27 August

This function is an extension of Registration and the formal opening of the Trades Exhibition. Liquid refreshments and finger food will be served. The cost of participating at this function is included in the registration for Registrants and Partners, additional tickets are available through the registration form.

N.Z. Pavilions – Wednesday 28 August

$35 per head

The New Zealand Pavilions is the venue for this optional evening. This social get–together extends a taste of New Zealand hospitality with entertainment by the resident Jazz Band. Spit Roasted Lamb is the menu for this evening.

Congress Dinner – Thursday 29 August

$65 per head

This evening function is a formal sit down dinner to be held at the Aotea Centre. The evening will be supported by a 'theme' and this theme will be advised to you in your confirmation letter.

REGISTRATION FEES (GST Inclusive)

Full Registration – $250

This registration fee includes the Icebreaker, Morning and Afternoon Teas, Lunches, all technical seasons and the Congress Book of Abstracts.

Day Registration – $100

This registration fee includes registration for one specific day, morning and afternoon tea, lunch and pocket programme.

Partner Registration

This registration fee includes the Icebreaker and the Partners Programme detailed under Partners Programme in this brochure.

BANKING SERVICES

New Zealand has many trading banks which can change foreign currency and travellers cheques. International credit cards are also accepted in most outlets in New Zealand.

PRE & POST CONGRESS TOURING

For those wishing to tour our beautiful country Guthreys Pacific will send their current brochures to interested parties. If special arrangements are required please forward those requirements with your registration form.

PARTNERS PROGRAMME

Tuesday 27 August

Registration
Icebreaker Opening Function

Wednesday 28 August

Opening Ceremony – Official Welcome
Dynamic Auckland II Tour, featuring:
- Auckland Harbour Bridge
- Historical Devonport & Lake Pupuke
- an extensive tour of Auckland City
- including a stop at both the War Memorial Museum and Kelly Tarlton's Underwater World

Thursday 29 August

Luncheon Cruise
- take a lunch cruise on Auckland Harbour. Enjoy a superb luncheon and a fine selection of New Zealand cheeses as the city skyline and harbour sights pass you by.

Friday 30 August

Free day.

LATE REGISTRATION FEES (GST Inclusive)

All Registration Fees received after June 30th will incur a late registration penalty of $50 per registration.

CANCELLATION FEES

In the event of cancellations a refund of fees will be made as follows:

Before 30 June 1991	– 75% refund
Between 1 July and 31 July 1991	– 50% refund
After 31 July 1991	– No refund

REGISTRATION CONFIRMATIONS

A registration confirmation letter will be forwarded to you when your registration has been processed. This letter of confirmation, stating your registration number is to be retained and presented at the Conference Registration Desk in order to receive your Conference Programme, list of registrants, namebadge and satchel. Details on the situation of the Registration Desk will be included in the letter of confirmation.

ACCOMMODATION

Welcome to Auckland! Accommodation has been reserved at sufficient hotels and motels during the congress to cater for all registrants and partners. A specially negotiated accommodation rate has been secured at all properties.

Please make your preference choice on the registration form based on the details below.

	Walking distance from Aotea Centre		Room Tariff / Type Per Night
Pan Pacific Hotel	2 minutes		$195.00 / per room
Regent of Auckland	10 minutes		$190.00 / per room
City Travelodge	15 minutes		$171.00 / per room
Centra Hotel	5 minutes		$180.00 / per room
Park Towers	10 minutes	Superior Standard	$ 88.00 / per room $ 58.30 / per room
Railton Private Travel Hotel	10 minutes		$ 63.00 / single $ 88.00 / twin or double
(Per room is single, twin or double)			
Motels / Motor Inns	30 minutes		$ 96.00 to $138.00 / per room

Reservations will be made for hotel accommodation for which a deposit of $200 will be required to secure the booking.

Please note : Should attendees travelling on their own wish to share a twin room, please do not ask the organisers to match you with someone requesting similar arrangements. Attendees must arrange for a companion to register and both must cross-reference other names under Special Accommodation Requirements. Family Units are available on request.

O'Rourke Halls University Accommodation with single occupancy.	5 minutes	$ 45.50 bed and breakfast

It is necessary for full payment to be made regarding this option of accommodation. Please complete this area of the registration form for this option.

OFFICIAL CARRIAGE

Ansett New Zealand has been appointed as the Domestic official airline for this Congress. A 30% discount is available to all attendees if reservations are made through Guthreys Pacific Limited. Please complete the section on Flight Details and reservations will be made and ticketed on your behalf. This discounted rate applies before and after the Congress.

Qantas has been appointed as the International Official Airline and a special fare is obtainable through the Guthreys Pacific Secretaria Office.

ARRIVAL AT AUCKLAND AIRPORT

Auckland Airport is located approximately 45 minutes from the city centre. Included in your registration fee is transport to your chosen hotel / motel on arrival and return. A voucher for your transfers will accompany your registration acknowledgement letter which will be sent to you once we have received your registration form. The transfer will be made by the Super Shuttle Company.

RENTAL CAR

Hertz have been appointed as the Official Rental Car Company and will provide a 20% discount to all attendees. Please fill in the relevant section of the Registration Form to make your reservation for before and after the Congress as well as during if required.

REGISTRATION ON ARRIVAL

Registration will commence at 1:30 p.m. on Tuesday 27 August at the Aotea Centre and will continue until 7:30 p.m. The Icebreaker will commence at this venue at 7:00 p.m. and will continue until 9:30 p.m.

AUCKLAND CLIMATE

Auckland in late August has a mild climate though changeable. The temperature usually ranges from 8 – 10 degrees Centigrade to 16 – 18 degrees Centigrade. It is advisable to bring an umbrella as the weather can change quickly at this time of year.

SOUTH PACIFIC MEDICAL LABORATORY
SCIENCE CONGRESS

REGISTRATION FORM

Retain a photocopy for your own records.

IMPORTANT

1. Please TYPE or use BLOCK CAPITALS in ballpoint pen.
2. Cheques should be made payable to Guthreys Pacific Convention Planners and payment made in **NEW ZEALAND DOLLARS**.
3. Please forward this registration form together with full payment to – South Pacific Congress
   GUTHREYS PACIFIC CONVENTION PLANNERS
   P O Box 22–255, Christchurch, New Zealand

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Title (Dr/Mr/Mrs/Ms/etc)
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Position

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Title (Dr/Mr/Mrs/Ms/etc)
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ACCOMMODATION			
Room Type			
Please CIRCLE	SINGLE	DOUBLE	TWIN
Arrival From:	/ /	Until Departure:	/ /

Preferred Accommodation			
* Please indicate first, second or third choice			
ACCOMMODATION VENUE	* No. 1/2/3	PRICE NZ$	TYPE OF ROOM (if applicable)
Pan Pacific Hotel		$195.00	
Regent of Auckland		$190.00	
City Travelodge		$171.00	
Centra Hotel		$180.00	
Park Towers		$ 88.00	Superior
		$ 58.30	Standard
Railton Travel Hotel		$ 63.00	Single
		$ 99.00	Twin/Double
Motel		$ 96–$138	approx. price
Special Accommodation Requirements		(Dietary, wheelchair, adjacent rooms, etc.	
O'Rourke Hall		$ 45.50 x ____ days = $ ____	
Arrival From: / /		Until Departure: / /	
Tariffs quoted are current, G.S.T. inclusive and are subject to change.			
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If you have arranged private accommodation in Auckland please advise:			
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Arrival Flight No:		Departure Flight No:	
Arrival Date:	/ /	Departure Date:	/ /
Arrival Time:	am/pm	Departure Time:	am/pm
Shuttle Service		**No. of Persons**	**Date**
Airport/Hotel Shuttle Required			/ /
Venue/Airport Shuttle Required			/ /
Hotel/Airport Shuttle Required			/ /
AIR TICKETS	Featuring the negotiated discounted fare of 30%. Please refer to this section in your registration brochure.		
Please complete flight details above – No. of people			_____

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Touring Brochures Required	South Island	North Island
(Please tick if required)		

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REGISTRATION					
Type of Registrant	**Days**	**FEES $ NZ**		**No. of persons**	**Total $NZ**
		Prior to 30 June	**After 30 June**		
Full Registrant		@ $250.00	@ $300.00		NZ$
Day Registrants	Wednesday	@ $100.00	@ $100.00		NZ$
	Thursday	@ $100.00	@ $100.00		NZ$
	Friday	@ $100.00	@ $100.00		NZ$
Partner Registration	Wednesday	@ $115.00	@ $165.00		NZ$
	Thursday	@ $105.00	@ $165.00		NZ$
	Wednesday + Thursday	@ $150.00	@ $200.00		NZ$
				Registration Sub–Total	**NZ$**

OPTIONALS			
Social Function	**No. of persons**	**Fees $NZ**	**Total $NZ**
N.Z. Pavilions		@ $35.00	NZ$
Congress Dinner		@ $65.00	NZ$
Icebreaker (additional tickets)		@ $28.50	NZ$
* all prices inclusive of GST			
		Optionals Sub–Total	NZ$
		Registration Sub–Total	NZ$
		Accommodation Deposit	NZ$
		TOTAL	NZ$

Address to the New Zealand Institute of Medical Laboratory Technologists' 45th Annual Scientific Meeting, August 1990

Hon D F Quigley

"Changes in the New Zealand Health System"

My starting point for my address today is the government's most recent budget. I quote from page 3 of that document,

> "In the last six years New Zealand's economy has been transformed. In 1984 it was controlled, protected and distorted. It was racked by high government borrowing, a massive and stubborn balance of payments deficit, chronic double-digit inflation, high and growing debt and high unemployment.
>
> Today virtually all of these problems have been addressed. Only unemployment remains a serious concern."

In fact the government was even more forthright in the economic strategy document accompanying the budget when it said that New Zealand is now moving into the third phase of its economic renewal. I quote from page 8:

> "Now that government and industry have their respective houses in order the challenge is two-fold: to accelerate the pace of growth and to ensure that all New Zealanders have a stake in the revitalised economy."

I want to discuss the implications of those quotations in the context of what I see as further essential reforms to the New Zealand Health System. This clearly suggests that I for one do not regard the task as having yet been completed in this area.

My advocacy for further reform is based on a simple premise: that the positive improvements that have been introduced in other sectors of the economy are likely to be nullified unless spending on health, education and welfare - which now accounts for 60% of total government expenditure - is brought under much better control.

Obviously what happens to health will influence your profession, so what are the options for further reform and the likely impact on your business?

In my view there are three broad choices.

The first is based on the current structure of Area Health Boards with the state continuing to be the main funder. The second is a variation of the first option with an internal health market organised around "managed competition". The idea here is to mimic the effects of market forces while keeping the sectors concerned under the overall control of politicians and civil servants. The British government is pioneering this approach in both health care and secondary education. In the reformed National Health Service, care will continue to be free at the point of delivery and financed mainly from taxation. But hospitals, wherever possible, will be spun off as self-governing trusts and obliged to compete for the contracts of health authorities.

The current opposition's health policy contains elements of this concept.

My third option is, for want of a better term, the competitive market approach with medical insurance providing the bulk of the funds that are necessary to run the system.

Obviously, there are a variety of ways in which these three approaches could be implemented, and indeed elements of each could be combined. However, the distinction I want to concentrate on, is between the state as the dominant funder - with the size of the total health budget fixed by central government - and a system which relies on the private judgement of each individual to determine how much is allocated to health.

Not surprisingly, my preference is for reliance on the private judgement of each individual or as I have termed it, the competitive market approach.

But health care is uniquely different from all other goods and services, I can hear a number of you saying, and indeed there is support for this point of view from a number of eminent sources.

A long list of the so called "unique" properties of health care has been drawn up over the years, but three seem to be of decisive importance:

- The monopoly power of the medical profession;
- The consumer's lack of information - which means that real consumer choice is impossible; and
- The uncertainty of demand for health care - which encourages people to take out health insurance - where the absence of direct payment encourages demand regardless of cost.

These three so called "market failures" which I have just listed, are said to be discoverable in both competitive market and state systems of health, because they are inherent in the service itself. In view of this, it is claimed, changing the public/private mix will make no difference. Therefore decision-makers should concentrate on resolving "the failures" within the public health system and simultaneously should desist from advocating market solutions. Implicit in this view is the belief that competitive markets are incapable of overcoming the special difficulties of supplying health care.

I will deal with the first two "market failures" in turn.

First, the monopoly power of the medical profession. This professional monopoly is seen as an inescapable permanent feature of health, and from this assumption it is inferred that the state must protect the consumer by direct control of the supply of health services. The conventional approach is that the doctor's monopoly is in part a consequence of the consumer's lack of information. However, in my view it is the other way around. The consumer's lack of information is a result of professional power, which has rendered consumer choice ineffective and has limited the development of alternative forms of health care delivery.

Constraints which limit the flow of information include: the severe limitations on what "non licensed" medical personnel can do; prohibitions against a doctor drawing attention to the differences between his or her services and those of their colleagues; advertising restrictions which deprive consumers of the knowledge about prices and services which they need to make a rational selection between doctors; the linking of self interest with "good causes" etc etc.

The Labour government has been active in attempting to reduce the power of the professionals by, for example, the encouragement of union clinics, last month's budget announcement of optional contracts for GP's tied to reduced charges for certain classes of patients, and the more recent proposal to amend the Nurses Act to give midwives the right to practice automonously.

I agree entirely with the concept that low-income groups in particular have as much right to high quality medical care as the rest of society. Indeed, I would go even further and say that it is a social responsibility to prevent anyone from being denied essential health care due to their lack of resources, no matter what health system is in place. The practical problem however - when you look at current hospital waiting lists and the cost of visiting a GP - is much more fundamental than this. It is all about how to introduce a system which is equitable and which provides access for all.

Secondly, the consumer's lack of information. Market-theorists hold that one of the main results of professional monopoly is the inability of the consumer to select providers who offer good quality service at "reasonable" prices; and that this in turn leads to the market being dominated by providers.

Two questions are consequently important. First, does the information gap make a competitive market impossible? Secondly, is the information gap such an insurmountable problem that it justifies the continuation of a system which is dominated by publicly funded facilities and services?

It is also claimed that the consumer is not well informed

about health outcomes. Ordinarily, a consumer knows whether a product works well and functions as advertised. Health outcomes are however said to be different. How do you know, for instance, whether you need a heart by-pass, or a hip replacement? And what does the patient know about the best ways in which to treat various forms of cancer?

The answer is that even medicine is not an exact science, and to the extent that uncertainty confronts both parties, that is no reason for presuming the consumer is especially ill-equipped to cope with choice. Moreover, it is no answer to uncertainty, to put consumers wholly at the mercy of producers. The doctor may know relatively more than the consumer, but still faces too high a degree of uncertainty to be placed in an unassailable position. Yet, in reducing consumer choice, that is exactly what a monopolistic public health system does.

A question of real significance is: can competition in health care protect the consumer?

Consumers face at least three main threats from suppliers of health services: overcharging, low quality care, and unnecessary treatment or surgery.

If we look at what has happened in the United States of America over the past 10 to 15 years, we get a better appreciation of the capacity of the competitive market to protect people from these dangers.

I am not saying that the American Health System is perfect, because it clearly is not. There are still real problems for the unemployed, the poor, and the uninsured which would not and should not be tolerated in a country like New Zealand. However, there has recently been a re-awakening of competition as the balance of power has shifted in favour of the consumer. This is a result of a number of factors. Concern about the escalating cost of health care was mounting through the 1970's, until by the end of that decade the vast majority of health experts in that country assumed that government regulation of hospital prices and the limitation of hospital building through state planning agencies was the answer. And it was also commonly assumed that it was just a matter of time until a compulsory national health insurance scheme was enacted. But by the early 1980's confidence in those approaches had wained.

In an effort to control the cost of Medicaid and Medicare (which are federal medical care programmes for the poor and the elderly), hospital records were reviewed case by case and contrasted with "standard" patterns of usage, including admission rates, length of stay, and diagnostic and treatment regimes. Hospitals that could not explain deviations from standard usage profiles were subject to denial of Medicare and Medicaid payments. The result was the introduction of a system of diagnosis related groups (DRG's) which classifies patients according to the condition responsible for their admission to hospital.

By 1979, Americans had had 15 years experience of Medicare and Medicaid and congress effectively conveyed the message to health care providers and insurers that they were on their own. By 1983 a system of Medicare payment based on DRG's was introduced. This had a dramatic impact on hospital finances as refunds were based on so much for an appendectomy, or a hip replacement and so on. When hospitals reacted by shifting their costs on to non Medicare customers, employers - who are major funders of health care in America - started to take a real interest in the return that they were getting on their investment in this area.

Two additional factors, in part fortuitous, also helped employers. The first was the huge growth in the number of medical practitioners, and the second was the intervention of the equivalent of the New Zealand Commerce Commission which began to outlaw professional restrictive practices. The massive increase in doctors in particular, dramatically altered the balance of power between the doctor and the patient. Some doctors found it impossible to get established in solo practice and therefore sought out the option of salaried employment in the alternative health delivery systems that had started to develop. Federal funding also gave particular encouragement to doctor's assistants and nurse practitioners.

The re-awakening of competition in the United States health market as the balance of power has shifted in favour of the consumer owes much to the efforts of employers who have sought to promote cost saving reforms of benefit plans and to encourage the emergence of new cost effective delivery systems.

Financial incentives to make low cost choices are now often built into schemes and there is increased flexibility to design tailor-made health packages. Where excesses are payable these may be waived or reduced if, for example, the patient chooses surgery in an out-patient department, or in a day surgery centre instead of being admitted to hospital. Similarly, financial incentives are offered to seek second opinions when surgery has been recommended.

Faced with difficulty in maintaining market share, Blue Cross and Blue Shield which are respectively hospital and doctor dominated medical insurance schemes have changed their roles significantly. They have promoted alternative health delivery systems including managed care, which is a traditional indemnity insurance package reinforced by cost containment measures. On the supply side, the most significant response to pressure from purchasers and insurers was the emergence of groups of providers who marketed themselves as cost effective suppliers by integrating health care delivery with insurance.

Profit and non profit hospitals also reacted to increased competition by - in some cases - moving into insurance in an attempt to hold or gain market share. Their in-patient throughput was under challenge from walk-in surgery centres offering one day surgery. And walk-in emergency clinics also offered competition with hospital out-patient departments and emergency rooms. Some hospitals have developed fleets of mobile diagnostic vans which has enabled them to share costly diagnostic services.

These innovations are the result of the new climate of cost containment, and have led to a dramatic fall in hospital usage.

This latter trend is in part the result of the shift to increased use of out-patient facilities, but has also impacted on visits to doctors' surgeries which have also fallen.

But does all this have any relevance to the New Zealand health scene?

If we exclude the competitive market option from consideration as a means of reshaping our health service, we are obliged to assume that a dominant public health system offers the best answer to at least three important questions.

- What is the best way to allocate resources to health: should it be by way of need or demand?
- How do we ensure rapid adaption to change so that our institutions match likely future requirements: is it better to rely on planning or leave room for at least some degree of trial and error?
- How best can the self interest of producers be prevented from damaging the general interest of consumers: should we trust self regulation, with the state as the overseer to prevent abuse, or rely on the promotion of competition?

I will deal with each of these questions in turn.

First, need or demand. Centralists insist that the allocation of resources by the state in areas like health is preferable to their allocation by market demand. However, the belief that medical "need" can be quantified, rests on the mistaken view that all health care is like emergency care. But most illness is not life threatening. Equally important, there is no automatically "correct" treatment which can be matched routinely with each patient's condition. Every decision in fact includes some non-medical elements, such as, the patient's preference for this or that degree or type of risk, and the patient's willingness to cope with this or that degree of pain or inconvenience.

Also, it is important to recognise that the cost of treatment must be a factor in all medical decisions, despite lingering

doubts that that should not be the case. And that means the ony real issue is: who decides? If patients don't choose, then the decision will be made for them by someone else; and under the current New Zealand Public Health System this means that the politicians still have a major say as they ultimately control the purse strings.

This puts patients at the mercy of decision-makers who are not experts in all the variables. Thus, the claim that resources should be allocated to health according to "need" is largely misguided, because in practice, sums assigned to health care are still selected on grounds largely unrelated to this criteria, such as the size of the deficit, the sale price received for Telecom, etc.

An alternative approach to central government fixing the total health budget is to rely on the private judgement of each individual about how much to allocate to health. This would result in a better informed judgement than can be made by central government, and in practice would mean that each individual would decide annually how much to spend on health insurance premiums. Mandatory minimum contributions covering basic requirements could if necessary, be required: but each person would - on the basis of overseas experience - have available a range of health options offering different degrees of comprehensiveness and varying levels of cost sharing. Premiums would reflect the insurance companies estimate of how much they would have to pay out in claims in the coming year based on what they had paid out during the previous 12 months. The consumer would decide how much he or she was willing to pay above the mandatory minimum, bearing in mind other demands on the household budget. The total sum assigned to health by this multiplicity of private judgements would more closely reflect what people wished to spend on health than any series of political decisions ever could.

Secondly, is innovation best achieved by planning or trial and error? Conventional wisdom is that planning agencies are the best means of devising the optimum institutions to supply health care. But if you look at what we currently have in New Zealand, the planned solution seems to leave a lot to be desired. And again on the basis of overseas experience, we must contemplate the possibility that freedom to innovate pays dividends which are likely to be foregone in the absence of a competitive market.

In essence, when the world is changing so rapidly, as few obstacles as possible should be put in the path of innovative individuals. This is not to say that governments are always wrong, but is a recognition that officials face different incentives from individuals acting in their own and in their families' interests.

Probably the most serious objection to resource allocation by officials or by politicians is the significant opportunity-cost that can flow from more attractive health options. Health maintenance organisations, for example, seem to be widely respected in America, and one-day surgery centres and home-help agencies have also developed there to compete with hospital in-patient care. Out-patient departments are also under challenge from walk-in clinics offering emergency treatment and diagnostic testing. A wide range of experiments are being conducted by insurers to discover the best ways of promoting cost-effectiveness. Some involve cost sharing of various types, while others prefer to rely more on control mechanisms which entail little or no cost sharing.

Gradually, the best answers for differing circumstances emerge on a trial and error basis, with a distinct possibility that New Zealand's best hopes for improving our health facilities lie with institutions not yet imagined, remembering that some fruitful ideas seemed doomed to fail when they were first proposed, but nevertheless succeeded in practice.

Thirdly, how do we counter-act self interest: by self regulation or competition? The centralist also believes that regulation and control - not the market - is the best means of containing the potential abuses of self interested producers. Given that the interest of producers is always likely to clash with the interests of consumers, there is a danger that controls may result in a situation worse than the original disease; particularly if the cost is the arbitrary curtailment of medical expenditure within tight budget limits and the patient has to bear the brunt of poor services.

What then should be the basis of reform in New Zealand? Given that the current New Zealand health system is likely to be subject to further dramatic change the key requirements of any reformed structure are:

- Better access to facilities
- Better accountability for money spent
- Better co-ordination between the various delivery groups
- The establishment of provider/funder links as opposed to user/funder links
- The involvement of plan sponsors in the operation and delivery of new options that favour efficient health care delivery and encourage recipients to make appropriate use of less costly care
- More emphasis on links between lifestyle, work-place safety, health care, health care delivery systems, etc.

Some of these requirements are receiving grudging attention, but certainly not all of them. In view of this, the central issue is what model or models suit New Zealand best in the current environment for change. The answer seems to revolve around:

- The capacity of key decision-makers to reshape public opinion to accept massive and innovative change in health care delivery systems;
- The funding role which government adopts;
- The extent to which Accident Compensation becomes part of the total health care system;
- The way in which and the extent to which health insurance is allowed to operate.

Although the government is likely to continue its current role of main funder at least in the short term, it is highly desirable that it abandons its role as the dominant provider of services as soon as possible. Governments or Quasi Government Agencies simply aren't good at running businesses, so why pretend that health is different. What the government should do is set national guidelines on: access to facilities, quality of care, goals, performance evaluation etc, and corporatise the public health system.

These changes will in my view improve the quality of health care delivery dramatically, if the overriding aim of reform is to achieve the twin objectives of a minimum standard of quality care for all and independent choice.

This will require acceptance of at least three principles. First, that no one is denied essential health care due to their inability to pay. Secondly, that the allocation of resources to health care by central government and the attempted control of those resources has led to inflexibility, a continuation of lack of access to facilities, and arbitrary rationing of resources. Thirdly, the development of delivery systems that are relevant to peoples' requirements.

All this suggests that your profession is likely to be subject to substantial change too, because it is after all an integral part of a total delivery system which is now part way through what will be seen in years to come as a dramatic metamorphosis.

What overseas experience does show is that even in the health field customers are capable of exercising rational choices and providers will respond with a range of options if that is what their customers demand.

Unfortunately in New Zealand we still don't seem to be prepared to trust the judgement of the customer in many aspects of our health delivery service; and as a result we often get what someone else decides we need. In my view that approach is now no longer acceptable nor an appropriate way to manage a business as important as health.

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A Reference Range for Mean Platelet Volume and Platelets in Normal Pregnant Women

Angela D. Thompson, MNZIMLS, Staff Technologist.

Address for correspondence: Haematology Department, Middlemore Hospital, Auckland Area Health Board.

Abstract

A study was made on 669 normotensive pregnant women to establish a normal reference range for the Mean Platelet Volume (MPV) and platelet count at Middlemore Hospital.

Consideration was given to MPV and platelet variations caused by gestation, race and technical changes.

Our results showed that both the MPV and platelet count were stable under *standard technical conditions*, and that a reference to the platelet count is required to determine if a MPV is within the normal range.

Key Words

Mean Platelet Volume (MPV), pregnancy, reference range, platelets.

Introduction

There have been several reports in the literature that a MPV which increases with the length of gestation is an indication of developing hypertension in pregnancy [1,2,3]. One of the most sensitive indicators of increased platelet turnover, and by implication, of platelet consumption in the pregnant patient, has been stated to be the MPV [3]. At Middlemore Hospital Laboratory, it was considered necessary to establish a normal reference range for both the MPV and the platelet count, before these parameters could be of direct assistance in the early detection of pregnancy-induced hypertension. In the establishment of a normal reference range the following points were studied:

1. The presence of an inverse relationship between platelet size and number [4].
2. The variations in the MPV due to:
   (a) the effect of anticoagulants.
   (b) the time interval between venepuncture and sample analysis [5,6].
3. The changes of the MPV and platelet count over different gestational periods.
4. The variation of the MPV and platelet count between racial groups.

Method

Antenatal women were selected at random where the medical information available suggested they were normal, between March 1988 and April 1989.

Women with a haemoglobin level outside the normal reference range, established in our laboratory for pregnant women (90-140g/l), were excluded from the study. The race of each woman was obtained by direct questioning at the point of collection.

There has been conflicting evidence about the effects of Disodium Ethylenediamine Tetraacetate (EDTA) Salts on the MPV over a period of time [5,6]. To determine the type of EDTA salt to use in this study a small comparative study of the effects of NA_2 EDTA and K_3 EDTA was made in our laboratory.

Five different patient samples were collected into each type of EDTA and the MPV measured over a period of six hours. The results showed that the samples taken in NA_2 EDTA had only a slight increase in the MPV within the first 30 minutes of collection, and remained more stable after this time, than samples collected in K_3 EDTA. As a result of these preliminary findings all samples were collected in dry Na_2 EDTA and the time between collection and processing of each sample in the study was recorded. This enabled any obvious trends in the change of MPV over time to be detected.

Sample analysis was carried out on a Coulter S+VI analyser. The analyser was calibrated and controlled according to the Coulter S+VI manual. A standard internal quality control programme, using frequent calibrations with Coulter 4C+ for accuracy and repeated sampling of a daily specimen for precision was employed.

Reference ranges for the haematology parameters were calculated using the formula Mean ± 2 standard deviations (± 2 SD). Statistical comparison was performed using the Newman-Keuls multiple comparison test at the 0.05 significance level.

The data was divided into five gestational groups:

1. < = 20 weeks n = 38
2. 21-28 weeks n = 223
3. 29-32 weeks n = 132
4. 33-36 weeks n = 173
5. > = 37 weeks n = 103

Results

1. A total of 669 normotensive antenatal women were included in the study. Table 1 compares the MPV against different platelet values. When these were plotted (Fig. 1) a nomogram similar to that produced by Bessman [4] was found. A non-linear inverse relationship between the two parameters exists.

Table 1.

MPV Reference Ranges for Platelet Values in Normal Pregnant Women

Platelets x 10^9/l	Mean MPV mean fl	Range ± 2SD	n
150-199	8.5	7.1-9.9	31
200-224	8.3	6.9-9.7	36
225-249	7.9	6.5-9.3	81
250-274	7.7	6.1-9.3	102
275-299	7.3	5.9-8.7	116
300-324	7.3	5.9-8.7	114
325-349	7.2	5.6-8.8	75
350-374	7.1	6.1-8.1	43
375-399	6.9	5.7-7.9	35
400-500	6.8	5.4-8.2	36

Samples collected in NA_2 EDTA and processed using a Coulter S+VI.

Table 2.

MPV and Platelet Ranges for Different Races

Race	Mean MPV fl	Range ±2SD	Platelet Mean x10^9/l	Range ±2SD	n
European	7.8	6.0-9.6	283	161-405	130
Maori	7.4	5.8-9.0	305	179-431	135
Samoan	7.4	5.8-9.0	299	183-415	127

2. No significant variation was found in the MPV or the platelet values as the samples aged (Figs. 2 and 3). Samples processed within 15 minutes of collection in our study (n = 19) showed a tighter MPV range (6.5-7.7 fl). This may have been due to the very small numbers studied in this group, however, the effect of EDTA cannot be discounted. Most samples did not arrive in the laboratory until 15 minutes after collection and showed no significant change in the MPV range over four hours.
3. No significant variation of the MPV or the platelet count

Fig. 1

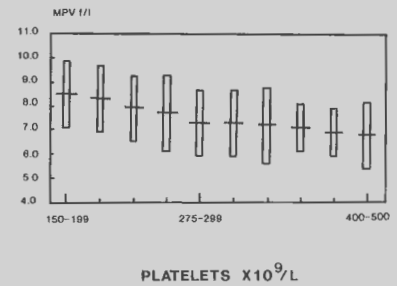


Fig. 2

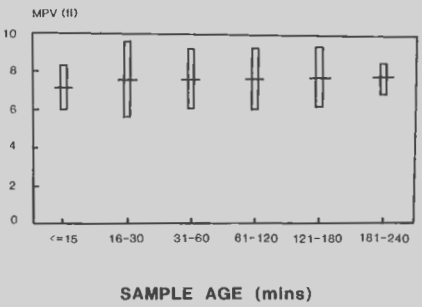


Fig. 3

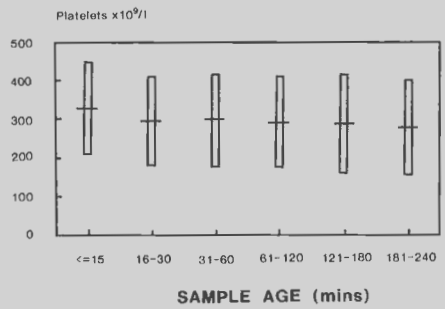


Fig. 4

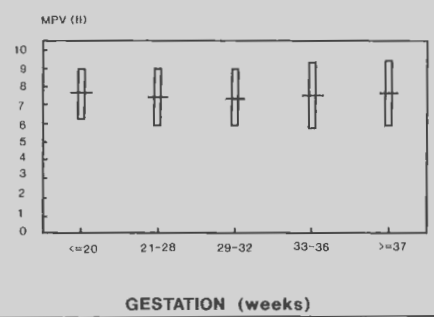
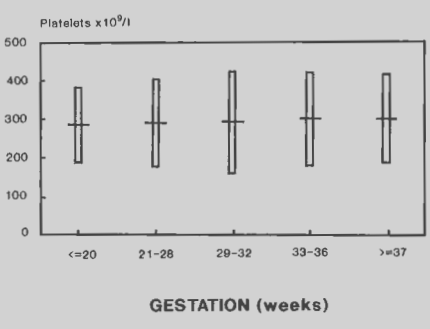


Fig. 5



was observed in the five gestational groups studied (Figs. 4 and 5).

4. Nine racial groups were identified in the study. Some groups contained only small numbers, and were not included in the study comparing race, MPV and platelet counts. Of the three races compared (European, Maori and Samoan) the European group showed a slightly elevated MPV range and lower platelet range (Table 2).

Discussion

Our results suggest that NA_2 EDTA samples should be processed at least 15 minutes after collection to obtain a reliable MPV. As the samples aged (up to 180 minutes) there was no significant increase in the MPV. There was no significant change in the MPV or the platelet count between the different gestational periods studied. With the three racial groups observed, the Europeans showed a slight increase in the MPV with a corresponding decrease in platelet count. This trend has also been noted by Bluck [7] and Carter [8].

The recommendation from this study is that one reference range for the MPV and platelet count can be used for all races and gestational groups studied under standard technical conditions, however if *technical changes* occur in the laboratory, reference ranges should be re-established. It must be stressed how important it is to establish your own reference range, according to the type of reagents and anticoagulant in use and also the type of machine used for sample analysis. From the literature it appears that the MPV seems sensitive to these technical variables [9].

The overall reference range for the MPV on normal pregnant women is 5.9 — 9.1 fl ($\bar{x}$ 7.5) with a platelet range of 175-415 x 10^9/1 ($\bar{x}$ 295).

These ranges should be represented in a nomogram form (Fig. 1) as there exists a non-linear inverse relationship between the MPV and the platelet count. The definition of a normal reference range for MPV requires also a reference to the platelet count.

Acknowledgments

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Chromosome Preparations from Direct and Overnight Cultures of Colonic Adenomatous Polyps.

Philip D. Cotter, M.Appl.Sc.(Hons)

Cytogenetics Department, Princess Mary Childrens' Hospital, Auckland, New Zealand.

Abstract

Direct and overnight/synchronized culture methodologies are described for producing chromosome preparations from colonic adenomatous polyps. On comparison, the overnight/synchronized culture proved to be superior on the basis of a higher mitotic index, greater chromosome spreading and improved chromosome morphology and banding.

Key Words

Colonic adenomatous polyps, human chromosomes, direct culture, cell synchronization.

Introduction

Several reports have emphasised the presence of characteristic chromosomal changes associated with colonic adenocarcinomas [1-4]. More recent attention has been directed to colonic adenomatous polyps [5-7]. These are considered to be precursors of colorectal carcinoma and may provide information as to the primary genomic changes associated with colorectal carcinoma. However previous cytogenetic studies of colonic adenomatous polyps have had a low success rate, generally due to a lack of observable metaphases [5].

Villous structures are present on the surface of colonic adenomatous polyps. Thus, cytogenetic methodologies used on chorionic villi (CV) can potentially be used on colonic adenomatous polyps. Longy *et al* [6,7] reported successfully applying a direct CV methodology to colonic adenomatous polyps.

Two different methodologies derived from CV culture methods are described and compared: a direct harvest technique and an overnight-Fluorodeoxyuridine/Uridine (FdU/dU) synchronization technique.

Materials and Methods

Reagents:

RPMI 1640 (Sigma) supplemented with 15% Fetal Calf serum (Gibco), 200U.ml^{-1} Benzylpenicillin (Glaxo) and 100μg.ml^{-1} streptomycin (Glaxo)

Hypotonic — 1% sodium citrate.

Colchicine (Sigma) — 30μg.ml^{-1} solution.

Colonic adenomatous polyp tissue was obtained from colorectal biopsy of a 29 year old male with hereditary colonic carcinoma.

Initial processing consisted of dissecting the tissue into 1-2mm^3 sections with a sharp scalpel[a].

Method 1. Direct Harvest

Modified from the direct method of Holmes *et al* [8].

1. Tissue was placed in 3ml culture medium in a 35mm Petri dish; 0.1ml of 30μg.ml^{-1} colchicine added (final concentration of 1μg.ml^{-1}) and the culture incubated in a CO_2 incubator for 1½-2hr.
2. The medium was gently aspirated and 3ml of hypotonic added (prewarmed to 30°C). Cultures were returned to the incubator for 20min.
3. The hypotonic solution was gently aspirated and 2ml of freshly prepared fixative (3:1 methanol:acetic acid) was added one drop at a time. This was immediately aspirated and 2ml of fixative added.
4. The Petri dish was placed in the fridge at 4°C for 10-20min or stored overnight at 4°C.
5. The fixative was aspirated and the Petri dish left for 1-2min at room temperature to allow the remaining fixative to evaporate.
6. 0.2-0.5ml of freshly prepared 60% acetic acid was added. The amount added was adjusted depending on the sample size. The Petri dish was gently agitated and release of cells from the tissue was observed under an inverted microscope.
7. The released cells were aspirated into a pipette. Slides were made by placing a drop of suspension onto a prewarmed slide (42°C on a hot plate) and then aspirating the majority of it back into the pipette.
8. GTG banding was performed according to the method of Seabright [9].

Method 2. Overnight-FdU/dU Synchronization

Modified from the method of Gibas *et al* [10].

Additional Reagents:

RPMI 1640 (Sigma) supplemented with 15% Fetal Calf serum (Gibco), 400U.ml^{-1} Benzylpenicillin (Glaxo) and 200μg.ml^{-1} streptomycin (Glaxo.

Combined 5-Fluorodeoxyuridine (Sigma) and Uridine (Sigma) (FdU/dU) working solution: 10^{-5}M in distilled deionized H_2O. Filter sterilized.

Thymidine (Sigma): 10^{-3}M working solution in distilled deionized H_2O. Filter sterilized.

1. Tissue was washed in medium supplemented with extra antibiotics.
2. Tissue was placed in 3ml of culture medium in a 35mm Petri dish and incubated in a CO_2 incubator at 37°C for 1½-2hr.
3. 0.1ml of FdU/dU working solution (final concentration 3.3 X 10^{-7}M) was added.
4. 17hrs later 0.1ml of thymidine working solution (final concentration 3.3 X 10^{-5}M) was added and the culture incubated for an additional 5hr.
5. 0.1ml 30μg.ml^{-1} colchicine (final concentration 1μg.ml^{-1}) was added for 1½-2 hr.
6. Harvesting and GTG banding proceeded as for the direct method.

Figure 1 *Typical metaphase from the direct harvest technique.*

Results

The direct method yielded preparations that had a low mitotic index, chromosome spreading was poor, chromatid separation was evident and the mitoses were very resistant to GTG banding (Fig. 1). The overnight-FdU/dU synchronization method resulted in a higher mitotic index and improved chromosome spreading. Chromosome morphology was improved with no evidence of chromatid separation and mitoses GTG banded well. Figure 2 is representative of the morphology and banding of the overnight-FdU/dU preparations. Metaphases observed from both methods were 46,XY. A single metaphase from the

[a]No further mechanical disruption of the tissue was required. Any mitoses were yielded via cell dissociation, on addition of the aqueous acetic acid, as is the case in direct harvest techniques for chorionic villi.

overnight-FdU/dU culture contained additional chromosomal material on the short arm of one chromosome # 8 (8p+), (Fig. 2).

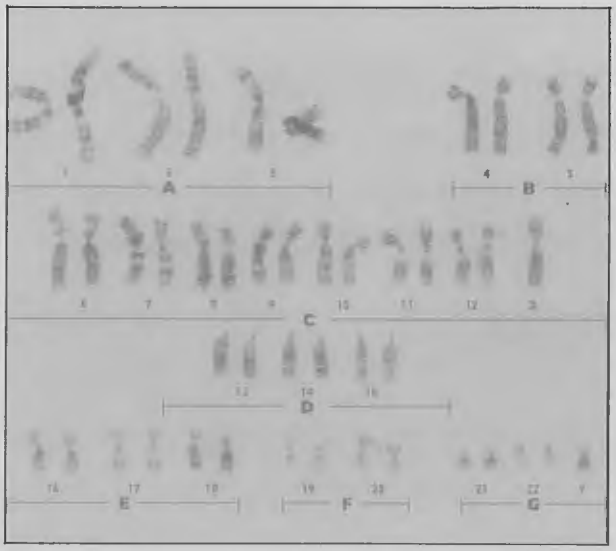

Figure 2 *Karyoptype from the overnight/synchronized culture, 46,XY,8p+.*

Discussion

The normal karyotype, found in preparations from both direct and overnight-FdU/dU synchronized methodologies, is consistent with earlier reports [5,6]. In the most recent series reported [7] 44% of cases had a normal karyotype. Where cytogenetic abnormalities have been identified in adenomatous tissue the most common findings have been trisomy of chromosomes 7, 8 or 13 [5,7].

Anomalies of 8p have not been reported in adenomatous tissue but are commonly associated with colorectal adenocarcinoma [4]. The finding of the 8p+ cell may represent an early cytogenetic change in the adenomatous tissue or may represent a neoplastic clone. The presence of a neoplastic clone could have resulted from an admixture of adenomatous and neoplastic tissues in the original sample.

Methodologies involving direct or short term culture of colonic adenomatous polyps have been favoured because they are more likely to yield dividing cells from the polyp [5,7]. The disadvantages of prolonged culture, i.e. cultural artefacts and overgrowth of normal tissue, are avoided. The main disadvantage of direct preparations of colonic adenomatous polyps is low mitotic yield, which has been attributed to a low rate of cell division [5]. A low mitotic index was noted in preparations from the direct harvest method. In addition there were problems with poor spreading of chromosomes and resistance of chromosomes to banding. The poor morphology of the direct preparations may be a result of damage to chromosome associated proteins by the action of the aqueous acetic acid [11]. These difficulties with the direct harvest method have also been reported in direct preparations of CV [11].

Overnight cultures incorporating fluorodeoxyuridine/uridine synchronization resulted in superior chromosome preparations. The mitotic index was increased and improved chromosome morphology and banding was observed compared to the direct harvest technique. The higher mitotic index is most likely a direct result of the synchronization technique. The reason for improved chromosome morphology with FdU synchronization is unknown. Similar results were reported after FdU synchronization of CV [10,11] and bone marrow [12]. As the two methodologies reported are derived from CV culture techniques it is not surprising that there are considerable similarities between the results observed in CV preparations and those presented here for colonic adenomatous polyps.

Conclusion

Of the two methodologies, the overnight/synchronized is superior. It combines the advantages of a short-term culture with a higher mitotic index, improved chromosome morphology and improved chromosome banding.

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Experiences with the Diagnosis of *Yersinia enterocolitica* — An Emerging Gastrointestinal Pathogen in the Auckland Area, 1987-1989.

Michael D. McCarthy, RMT, MNZIMLS*, Stanley G. Fenwick, BVMS, MRCVS

*** Diagnostic Laboratory, Auckland and Department of Veterinary Pathology and Public Health, Massey University.**

Address for correspondence: M.D. McCarthy, Microbiology Department, Diagnostic Laboratory, 43 Symonds Street, Auckland.

Abstract

This paper will review the practical laboratory aspects of the isolation, identification, typing and susceptibility testing of *Y. enterocolitica* and will relate these to the methods used at Diagnostic Laboratory, Auckland.

Key Words

Yersinia enterocolitica, Yersiniosis, gastro-intestinal disease.

Introduction

Yersinia enterocolitica was first isolated by McIver and Pike in 1934 [1], however, the organism was not described until 1939 when Schleifstein and Coleman characterised isolates from 5 human sources [2]. Between 1939 and 1964, when Frederiksen proposed the name *Y. enterocolitica* for the species, there were only a few recorded cases of infections from the U.S.A. and Europe [1]. Since then the incidence of *Y. enterocolitica* infections has risen dramatically and in several countries, including the Netherlands, Belgium, Canada and Australia, the organism has surpassed *Shigella* and rivals *Salmonella* and *Campylobacter* as a cause of acute bacterial gastroenteritis [3].

Although most recorded cases are sporadic, a number of outbreaks of infection involving *Y. enterocolitica* have been reported. In 1973, Asakawa *et al* [4] and Zen Yoji *et al* [5] reported outbreaks in school children in Japan and Toivanen *et al* [6] described six human cases in Norway. Hinderaker (1973) [7] reported 10 further cases associated with the Norwegian outbreak. In 1975, Olsovsky [8] reported an outbreak amongst children in Czechoslovakia. In the U.S.A. Aulisio (1982) [9] described an outbreak involving the consumption of contaminated milk and Shayegani (1983) [10] described an epidemic affecting 239 campers in New York State.

While *Y. enterocolitica* infections have been reported from many countries worldwide there have been few reports of disease in New Zealand. Over the past three years however, a rise in the number of isolations in the Auckland area has been recognised at Diagnostic Laboratory, alongside a general increase in the isolation of other enteric pathogens.

Table 1 shows the number of isolations of the four major gastrointestinal pathogens in the Auckland area from 1987 to 1989.

Thus the isolation rates show an increase of *Salmonella* isolations from 1.0% in 1987 to 2.2% in 1989, *Campylobacter* from 6.2% in 1987 to 7.8% in 1989, *Shigella* a slight decrease from 0.2% in 1987 to 0.15% in 1989 and *Y. enterocolitica* rising from 0.2% in 1987 to 0.5% in 1989.

Isolation

Enrichment:

Early studies relating *Y. enterocolitica* to human disease made use of the fact that *Y. enterocolitica* is one of the few human pathogens able to grow at refrigeration temperatures, i.e. 4°C. Eiss [11] described enrichment of the specimen in phosphate buffered saline (PBS) pH 7.6 at 4°C for up to three weeks as a preferred method of isolation. This cold enrichment technique was used extensively by Toma and Deidrick [12] when they investigated the caecal contents of swine for *Y. enterocolitica*, subculturing after one day and again after 21 days incubation at 4°C.

Shayegani *et al* [10] investigated an outbreak of food-borne yersiniosis in a summer camp using the cold-enrichment technique to recover 45 isolates of *Y. enterocolitica* from 68 faecal samples.

Mair and Fox [13] criticised the cold enrichment method for two reasons —

(i) the delay in processing and reporting did not aid the clinical diagnosis and (ii) this enrichment seemed to encourage the selection of environmental strains of *Y. enterocolitica* i.e. biotype 1A. Nevertheless, all the isolates recovered by Shayegani were serotypes 0:8 and 0:34, not considered environmental strains.

In 1980, Aulisio *et al* [9] reported that alkali treatment of food and faecal samples was an effective method for the selection of *Y. enterocolitica*. Essentially, the specimen is mixed at a ratio of one part of specimen to two parts of a solution of 0.5% KOH in 0.9% NaCl and blended vigorously on a Vortex mixer for two minutes. A loopful of the alkali treated material is then streaked onto an agar plate for single colonies, followed by incubation at 25-28°C for 24-48 hours. The remainder of the alkali treated solution is added to 10ml of sterile PBS for cold enrichment at 4°C and examined at two and seven days by plating onto a selective agar.

Weissfeld and Sonnenwirth [14] reported the successful recovery of *Y. enterocolitica* using the alkali treatment method within an acceptable clinical time frame, as they only plated directly from the alkaline mixture and did not perform cold enrichment.

Ratnam *et al* [15] compared alkali enrichment with direct plating and other enrichment techniques, including the commonly used broths Selenite F, tetrathionate, gram negative and modified Rappaport. They found (i) that the KOH method was time-consuming and tedious (ii) two day enrichment in modified Rappaport's broth performed poorly (iii) gram negative broth was unsuccessful (iv) selenite F broth was useful and slightly superior to other broths for overnight enrichment.

Ratnam *et al* [16] had previously noted that a higher recovery of *Y. enterocolitica* was obtained by overnight enrichment of diarrhoeal stools in selenite broth than by direct plating onto MacConkey or Salmonella — Shigella agar.

In this laboratory we therefore adopted the selenite F broth enrichment, as selenite F was already in use for the enrichment of salmonellae, and incubated at 36°C for 18

Table 1.

Isolation of gastrointestinal pathogens in the Auckland Area.

	SPECIMENS	SALMONELLA		CAMPYLOBACTER		SHIGELLA		YERSINIA	
		TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%
1987	20,382	213	1.0	1,264	6.2	39	0.2	52	0.2
1988	23,258	370	1.5	1,590	6.8	54	0.2	173	0.7
1989	38,453	877	2.2	3,011	7.8	59	0.15	193	0.5

TOTAL = Number of Isolates
% = Isolation Rate

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NZIMLS CONTINUING EDUCATION

FELLOWSHIP

Fellowship is the highest academic category of membership offered by the N.Z.I.M.L.S. It is intended that the level should equate with the highest medical science qualifications available world wide. Successful candidates will have the attributes required of a specialist scientist able to take charge of a reference laboratory. In addition to utilising a thorough knowledge of established theory and practice they should be able to demonstrate their ability to undertake developmental work beyond the limits of contemporary technology.

Recently three scientists have been admitted as Fellows of the N.Z.I.M.L.S. and demonstrate the three ways this qualification can be gained:

1. by examination — Jackie Wright, Whakatane Hospital Laboratory.
2. by submission of a thesis — Steve Henry, Auckland Regional Blood Centre.
3. by exemption — Rob Siebers, Wellington School of Medicine.

Jackie Wright, Laboratory, Whakatane Hospital.

Jackie Wright, Laboratory, Whakatane Hospital.

My earliest childhood memory is of waking up as a bored two year old and investigating at close range the contents of my nappy. I clearly remember sister aged six screaming, "Mum, Jackie's poohed herself and she's playing with it!"

Twenty five years later I am still "playing with it" but now I prefer other peoples!

On qualifying in Microbiology at Christchurch I immigrated to Whakatane and became part of a busy microbiology department staffed by 3.5 people (staff cutting has outrageous effects).

Although our work load is small compared to larger institutions the type of work is diverse and there is scope to follow trends and monitor unusual isolates.

My treatise for my fellowship was based on a three year study of the blood culture system in use at Whakatane hospital for which I monitored significant isolation and contamination rates; introduced and monitored improvements, and considered market alternatives.

Working at a small centre does not allow for specialisation and staffing constraints mean that all study is done in my own time. However, this does not prevent me from pursuing interest subjects and I am currently trying to fund a research project which will investigate the prevalence of protozoal and bacterial gastro-intestinal infection in the Eastern Bay of Plenty.

Stephen Henry, Tutor Technologist, Auckland Regional Blood Centre.

Stephen M. Henry,
Tutor Technologist,
Auckland Regional Blood Centre.

I am currently the Tutor Technologist at the Auckland Regional Blood Centre and have a special interest in the Lewis system in Polynesians.

In 1985 at the N.Z.I.M.L.T. Conference I reported that the rare Lewis Le(a+b+) phenotype was common in Polynesians, and later published these results (*Hum Hered* 1988; **38**: 111). Then in 1987 I attempted to elucidate the cause of the Le(a+b+) phenotype as my N.Z.I.M.L.T. fellowship project and was awarded fellowship on the basis of my thesis "The Serology and Genetics of the Le(a+b+) Phenotype in Polynesians" in June 1989. This thesis postulated the existence of a mutant Secretor gene (Se^W) in Polynesians which caused not only the Le(a+b+) phenotype but also aberrant salivary ABH secretion. It was shown that almost all Polynesians are ABH secretors, and the red cell Lewis phenotype does not correlate with the ABH secretor phenotype. The major work in this thesis has since been published; *Vox Sang* 1990; **58**: 61-66. *NZJ Med Lab Technol.* 1989; **43**: 64-67; *Immunohaem* 1988; **4**: 75-78.

I continued to study the Lewis system in Polynesians as a part-time masters student and further evidence of the postulated Se^W gene was found, with either the "missing" Le^b epitope or a "novel" Lewis structure being discovered on some Polynesian red cells. This work and other work involved the production of affinity purified antibodies to the Le^c and Le^d epitopes, immunohistological fluorescent staining of tissues with these antibodies, fucosyltransferase assays and affinity chromatography utilising thermal elution are reported in my masters thesis: "Immunochemical and Biochemical Studies of the Polynesian Lewis System".

The question I am now attempting to answer as a part-time PhD student is "Does the Se^W gene exist, and if it does, it is responsible for the production of a novel Lewis structure?" Resolution of this problem will involve isolating and sequencing the Polynesian Secretor gene(s) as well as isolating Polynesian Lewis glycosphingolipids and determining their structure by Nuclear Magnetic Resonance.

Robert Siebers, Wellington School of Medicine.

Robert Siebers FNZIMLS, CBiol, MIBiol
Qualified as a Medical Laboratory Technologist in the Netherlands in 1969, and emigrated to New Zealand where "O" levels in haematology and chemical pathology were obtained at Hutt Hospital in 1971. From 1971 to 1973 second-in-charge laboratory at Hawera Hospital, then charge technologist, biochemistry, at Hastings Hospital, obtaining an "A" level in clinical biochemistry. From 1976 to 1979 charge technologist, automated biochemistry at Wellington Hospital followed by a year as products representative for Roche. Left the profession for three years to be house-husband while wife established her medical career. In 1983 resumed work at the Wellington School of Medicine as senior technical officer for Associate Professor T Maling, obtaining the MIBiol qualification from the Institute of Biology, UK, in 1988. Have had more than 40 papers published and currently completing an MSc part-time at Otago University. Membership of the NZIMLS, NZ and Australian Associations of Clinical Biochemists, Biomedical Research Society, and Australasian Society of Clinical and Experimental Pharmacologists. Awarded international travel awards from the NZ Association of Clinical Biochemists and NZ Heart Foundation in 1988 and 1989, and the Roche Clinical Chemistry award from NZIMLS in 1979 and 1990.

Research work leading to Fellowship of NZIMLS
The research interests of our Unit are the pathophysiology of human essential hypertension, and clinical pharmacology. The cause of hypertension is hypothesised to be alteration of cellular cation transport mechanisms leading to increased calcium in smooth muscle cells and thus increased contractility resulting in raised blood pressure. Work began in 1983 establishing methodologies for membrane sodium transport mechanisms leading to studies in human hypertensive subjects. These studies demonstrated that there was no evidence for a digoxin-like inhibitor as a cause of hypertension, and also led to the findings of altered renal sodium handling in Maori men, which may explain their higher incidence of developing hypertension later in life. Other work focused on the anti-arrhythmic drug amiodarone. Because of its long half-life and potentially severe side effects, studies were undertaken in patients on long-term amiodarone therapy. Methods were established for measuring its concentration in plasma and erythrocytes and correlated with cardiovascular parameters. These studies demonstrated that erythrocyte amiodarone does not correlate with side effects; that cardiovascular parameters do not correlate with plasma amiodarone levels, and that there is wide intra-individual variation in plasma and erythrocyte amiodarone concentrations precluding therapeutic drug monitoring of amiodarone treated patients.

These studies were published in local and international journals and together with higher qualifications obtained were submitted for and awarded Fellowship of the NZIMLS by exemption.

1. Jackie Wright's examination in Microbiology consisted of three examination papers:
   Paper 1: 2 hours (20%)
   Paper 2: 3 hours (30%)
   Paper 3: 3 hours (30%)
   and the submission of a treatise (20%) of approximately 3000 to 5000 words. Her's was entitled "An Assessment Of Blood Culture Systems For Use In The Smaller New Zealand Public Hospital." Jackie's achievement is even more notable because she gained the qualification while working in a smaller hospital laboratory.
2. Steve Henry's excellent thesis was entitled "The Serology and Genetics of the Le(a+b+) Phenotype in Polynesians", and represented over two years work. A thesis must include mostly the original work of the candidate and conform to the British Standards Institution regulations.
3. Rob Siebers received Fellowship by exemption on the basis of a higher qualification and supporting publications. Rob's higher qualification was MIBiol. from the Institute of Biology, London and he has many publications not only in our own Journal but also in other internationally recognised Journals such as *Clin.Chem.* and *Clin.Chem.Acta.* His major publications pertain to erythrocyte sodium transport in hypertension and amiodarone monitoring in patients with cardiac arrhythmias.

   These comments do not constitute the regulations but demonstrate the wide range of interests and backgrounds that can lead to Fellowship.

For further information on Fellowship contact:
Jim Le Grice
Medlab South, P.O. Box 25091, Christchurch. Ph: 650624, Fax: 650920.

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Membership Fees and Enquiries

Membership fees for the year beginning April 1, 1990 are:

For Fellows — $88.40 GST inclusive

For Members — $88.40 GST inclusive

For Associates — $33.80 GST inclusive

For Non-practising Members — $33.00 GST inclusive

All membership fees, change of address or particulars, applications for membership or changes in status should be sent to the Membership Convenor at the address given above.

Members wishing to receive their publications by airmail should contact the Editor to make the necessary arrangment.

Membership Sub-Committee Report — November 1990

Since the May meeting there has been the following changes:

	7.11.90	27.8.90	29.5.90	14.3.90
Membership:	1272	1315	1702	1628
less resignations	3	19	16	12
less G.N.A.	5	35	51	1
less deletions	-	-	328	-
less deceased	-	-	-	2
less duplications	-	9	-	-
	1264	1252	1307	1613
plus applications	3	9	8	89
plus reinstatements	1	11	-	-
	1268	1272	1315	1702

Applications for Membership

Ann GORDON, Auckland; Andrew THAKURDAS, TELARC; Gregory BAKER, Wellington.

Gone No Address

Fira KOROIVUETA, Auckland; Marion SMITH, Auckland; Wendy OVERY, Auckland; Lisa TWEEDIE, Wellington.

Resignations

Karen BOWMER, Auckland; Tracey CLEARY, Northland; Barbara SILVESTER, Palmerston North.

LETTERS TO THE EDITOR

Dear Sir,

With the opening of the New Auckland Childrens' Hospital, later this year, a golden opportunity arises for a Re-Union of all those medical technologists and others who have been associated with Princess Mary Laboratory.

It is intended to hold this on the 2nd weekend in October.

All interested people to write for more information from:

Re-Union
c/- Princess Mary Laboratory
Auckland Hospital
Private Bag
AUCKLAND

Yours faithfully
Terry Martin

Dear Sir,
re: Health Care in the Urban Jungle: A Brief Visit to Boston City Hospital.

While Dr. Antje van der Lindon and I were attending the Nosocomial Diseases Conference in Atlanta this year, Antje arranged for us to visit Dr. David Teele who is a pediatrician at Boston City Hospital. When we expressed an interest in having a look around the hospital, David was kind enough to arrange a visit with Dr. Kurt Stottmeier who runs the Microbiology laboratory at Boston City Hospital.

We had been warned to lock our car doors, to get off the streets and into the (comparative) safety of the hospital as soon as we arrived.

Muggings of staff are a frequent occurrence, the car park attendants are armed, the corridors are patrolled by armed police, and the receptionist at accident and emergency had an armed security guard lounging in a chair behind her at ten in the morning.

Boston City Hospital is a grubby brick rabbit warren, however the rundown appearance is explained by the fact that the 500 bed hsopital is due to be replaced in the near future.

Patients are charged for medical care but accounts are sent to patients more in hope than expectation of payment, so most of the costs of running the hospital are met from taxes raised by the city.

The hospital provides health care for an inner city population of the poor and indigent with a high population of illegal aliens, unemployed, and drug addicts, which means that they tend to have extremely interesting diseases.

The AIDS epidemic has increased the numbers of patients with cryptococcal meningitis, and cryptosporidial diarrhoea and a host of other opportunistic diseases which are straining the resources of the health care system. HIV positive patients are not considered to have AIDS itself until they start to come down with opportunistic diseases such as cryptococcal diarrhoea which is considered diagnostic of AIDS. Mycobacterial infections are also important in AIDS patients with a larger number of nontubercular mycobacterium isolated than is common in N.Z.

A cosmopolitan population from all over the world produces diagnostic problems not often seen here - a patient operated on with what was thought to be a hernia proved to have an abscess which grew H. ducreyi.

Exotic diseases are also brought in from South America by illegal immigrants. Trypanosomiases and leishmaniasis are occasionally seen, but some of the even more exotic habits of

the patient population also present their own diagnostic challenges.

A good example is acquaintances of drug addict patients who bring in syringes full of heroin to inject into IV lines rather like you and I would bring fruit and biscuits to friends in hospital. Not surprisingly they isolate a lot more pseudomonads from blood cultures than we do.

Shortsighted decisions in health care have compounded problems. Because pregnant women get priority for the methadone drug withdrawal program, many female addicts become pregnant. The resulting babies are considered lucky if they are born drug addicted - the unlucky ones are also HIV positive.

The high population of illegal aliens also means that there is a large number of children in the population who have not been vaccinated for common childhood diseases, resulting in a recent outbreak of measles.

There are eighteen staff members in the laboratory, (not counting clerical workers), most of whom I was surprised to learn had very little in the way of formal qualifications. Generally speaking the staff had worked in the laboratory for a long time, and consequently were very loyal to the institution.

There was no "on call" system for after hours work in the laboratory - CSF Gram stains and cultures were done by the medical staff on duty, incubated, and sent to the lab the next day. Cell counts were done in Haematology.

The laboratory used methods familiar to most N.Z. laboratory technologists, for example the API system and disc sensitivities for antibiotic testing, juxtaposed with state of the art technology such as DNA probes to identify *Mycobacterium species.* They used two probes one to identify *M. tuberculosis* and *M. bovis* and another for *M. avium.*

They had tried the Bactec radiometric system for blood cultures but found that Septichek was more appropriate to their need for a system that would quickly identify *Cryptococcus neoformans* and fungal infections and caused fewer waste disposal problems.

Medical garbage from Boston is transported in refrigerated trucks for dumping at points unknown in Canada. Consequently it costs more to dispose of medical waste than it does to buy the goods in the first place. Radioactive waste such as that produced by the radiometric Bactec blood culture machine is an even greater problem.

Morale in the laboratory appeared to be high, due in large part to the fact that the pathologist in charge was fiercely protective and proud of the work produced under trying conditions. Required qualifications for lab. techs. appear to vary widely from state to state and even hospital to hospital in the same city with corresponding differences in working conditions and salary.

We didn't have the opportunity to visit other laboratories, however we did briefly visit the Boston Childrens' Hospital which was cheerful and clean, the orderlies and receptionists were of a totally different character, and there wasn't a firearm in sight. Not incidentally the patients usually paid for treatment there. I wasn't at the Invercargill conference however I have heard about Mr. Quigley's address expounding the joys of "user pays". Those who make the decisions on where the money comes from to pay for our health care in N.Z. would be well advised to look at the massive social injustices produced by those policies. It was very clear in Boston that the segment of the population most needing health care had the least access to it, and that sooner or later all of society would pay, not necessarily in dollars.

Health care in the U.S.A. is a huge industry, the newspapers are full of jobs, especially for microbiology technologists. I feel anyone with a sense of adventure and enough persistence to get through the bureaucratic maze could organize themselves a job in the U.S.A. I can't guarantee that any one individual would improve their lot in life by working in the U.S.A., but love it, or hate it, - you wouldn't be bored with it!

Yours sincerely
Lorraine C. Craighead

Dear Sir,

Kenepuru Hospital is celebrating its first decade on Friday 1 March 1991 with a reunion dinner for past and present staff. All interested staff can write for more information from

Leanne Arker
Kenepuru Hospital
PO Box 50-215
PORIRUA
Phone (04) 370-179
Fax (04) 376-015

Yours
Leanne Arker

Dear Editor,

Thank you for printing my letter regarding my return trip to Qui Nhon, Vietnam, in the November Journal *(NZJ Med Lab Technol.* 1990;44:4 p131). However there is one error in the transcript which rather negates the point I wished to make as to the poverty experienced by both institutions and individuals in that country.

In the section of the letter where I refer to donations of blood it states that a donor is paid 15,000 dong per 100mls of blood, which is correct. The conversion rate is given as $NZ1 = 300 dong, which converts to $NZ5 per 100mls of blood. This means a maximum donation of 300mls netts the donor $NZ15, which is more than a months wages for most Vietnamese citizens, not $NZ150 as the printed transcript would suggest. I believe that in the six months since I visited Vietnam the dong has deteriorated even further in value.

This is a small point to raise but I feel it is an important one.

Yours faithfully
Jim Mann

Quality Assurance the Aotearoa Way.

Les Milligan, MLT.BT, F.N.Z.I.M.L.S.
Robyn Ashton, BSc. A.N.Z.I.M.L.S.

Immunohaematology Department, Pathology Services, Dunedin Public Hospital, Dunedin, New Zealand.

Introduction

A review of the New Zealand Tissue Typing (HLA) quality assurance programme as presented to the Australasian and South East Asian Tissue Typing Association Annual Scientific Meeting: Auckland September 1990.

For the pursuit of accuracy, no better advice will be found than that of Race and Sanger, written 40 years ago: "the importance of placing the right serum and the right cells in the right tube and of correctly recording the results is almost too obvious to mention. Yet to achieve accuracy a long apprenticeship in error seems necessary. A friendly but silent atmosphere is essential. Given silence, there is still danger of the mind wandering; this it must not be allowed to do, however routine the tests may be, however primrose the alternative paths".

The increased need for HLA typing in clinical and medico-legal conditions has necessitated the standardisation of HLA typing among laboratories. Although HLA serology continues to become more complex, it also continues to gain increasing acceptability in its application to:

(a) organ and tissue transplants;
(b) white cell transfusions;
(c) diagnosis of HLA-associated diseases;
(d) paternity disputes.

In the past a number of modifications of the basic lymphocyte typing technique have been in wide use, leading to significant inter-laboratory variations in HLA phenotyping of a single individual. It has therefore been essential that nationally or internationally accepted standards for both HLA typing methods and HLA phenotyping procedures have been employed.

Major requirements for the reliable operation of clinical tissue typing laboratories is that test results should be accurate, meaningful, and unchallengeable. The process known as Quality Assurance attempts to provide these attributes.

Such a programme should cover such widely separated factors as laboratory design, the administrative framework, and the attitudes, knowledge and skills of laboratory staff, as well as the purely technical aspects. The major technical points in Quality assurance are:

1. The appreciation and assessment of the sources of error inherent in the collection, transport, and reception of specimens for analysis and for any initial processing steps, such as separation of lymphocytes.
2. Validation of new procedures with respect to accuracy, repeatability, and sensitivity.
3. Establishment of the reproducibility of methods in regular use.
4. Continuous independent monitoring of performance by means of fictitious patient controls or duplicate testing of samples.

During the 1970's the International Society of Blood Transfusion set out the following guidelines for consideration when establishing a quality control (assurance) programme.

For purposes of ensuring adequate quality of results, consideration should be given to employing the following methods:

(a) Regular comparison of phenotype frequencies in test results with those of a control group.
(b) Repeated testing of antiserum on well-defined control cells.
(c) Double readout of plates.
(d) Standardisation of methods.
(e) Participation in quality-control exercises with other laboratories, eg by exchange of reagents and central data analysis of results.
(f) Reservation of a high quality separately defined serum set for use in typing within organ-exchange programmes. (This provides higher quality assurance for organ exchange programmes.)

It was also recommended that the following parameters should be carefully and regularly monitored.

Accuracy	Agreement between observed and true, or most probable result.
Precision	Agreement between replicate measurements of the same substance. Results may be precise but contain consistent error and thus be inaccurate.
Repeatability	Precision achieved by one technologist without change of reagents or technique.
Reproducibility	This term is for use with instrumented methods. It refers to the ability to maintain a certain degree of accuracy and sensitivity over an extended period of time. The reliability of a method must be kept constantly under review since it may change, for instance, with a change in the staff performing the method.
Sensitivity	The power of detection of a technique. A measure of the smallest concentration that can clearly be distinguished from a negative result.
Validation	(a) Assessment of the accuracy, precision, specificity and sensitivity of a technique. (b) Assessment of the ability of a technologist to achieve a satisfactory degree of precision and accuracy with a particular technique.
Specificity	Ability of a technique or reagent to determine solely what it purports to detect or measure.
Error	Any unnecessary decrease in accuracy.

History of Quality Assurance in New Zealand Tissue Typing

ANALYSIS OF RESULTS MUST HAVE SOME POSITIVE APPLICATION AND BENEFIT TO PARTICIPATING LABORATORIES.

1. Quality assurance programmes must monitor whether equipment and procedures fulfill their expected functions and whether personnel perform these procedures in an approved, reproducible fashion.
2. Quality assurance programmes must be practical and realistic.
3. Testing should not be excessively time consuming nor should it result in the accumulation of unnecessary data.

From 1976 the four tissue typing laboratories in New Zealand spasmodically exchanged samples for testing (supposedly on a monthly basis). More often than not, the final destination of the cells and the results were mysterious! Early in 1980 the following observation was made, "that without receiving the despatched samples and/or replies to the quality control programme — the system does not help anyone!" It was also noted that samples from other quality control sources were often untypable on receipt, the results were often (apparently) received after the set deadline for analysis — or the final analysis issued results later — by this time the interest and importance had waned.

In 1981 the format was agreed whereby the following procedure was adopted by the Tissue Typing Working Party of the New Zealand Transfusion Advisory Committee.

Samples to be distributed every 3 months by one of the participating laboratories.

The results would be reported, collated and a summary sent out within two weeks of receipt of all results.

The programme was run on a voluntary non-profit basis.

The Auckland laboratory would supply sterile Beckman tubes to all the participating laboratories.

A full report, along with the analysis of the Terasaki and Aseatta Quality Control programmes to be presented on an annual basis.

The main thrust of this programme was summed up by John Dagger (on the 5th October, 1981!!) ". . . how we can improve ourselves individually by helping each other".

We do not intend to present an exhaustive analysis of all our results but rather present some interesting findings and introductions since the beginning of this programme:

1. It was quickly established that the New Zealand postal service was not the best way to send samples;
2. it was not good protocol to have quality assurance samples arriving in laboratories at 4.30pm on a Friday afternoon;
3. correct labelling of samples is as important in quality control assurance programmes as is for diagnostic work. No errors are acceptable;
4. cell counts and viability tests are required prior to despatch;
5. despatch laboratories to carry out the typing at approximately the same time as all the participating laboratories;
6. some contamination was seen early in the programme — repeat samples should be available if required;
7. to aid in continued improvement in antigen identification for quality assurance and routine work, reviewed lists of antisera should be annually distributed;
8. important to use the trays, staff and methods which are in routine use. The use of commercial trays as supplied by Terasaki, if any lab is using them, is not a test of a laboratory's ability to routinely define antigens pertaining to the local ethnic and sub population;
9. generally, all participating laboratories performed well in these surveys.

From local quality assurance and ethnic population studies we are able to type with confidence the following well established Maori genetic markers:

A2, A24, A11, Aw34
B22, B39, B60, B61, Bw48
Cw1

It is interesting to note that successive studies show a steady increase in the frequencies of HLA -A3 and HLA -B7, suggesting a gradual Caucasian admixture. The southern South Island Maoris typed showed an increased frequency of HLA -A3 and HLA -B7 compared to the southern North Island and northern North Island Maoris typed for the 3rd AOHWC. This increase could be due to "founder effect" or greater caucasian admixture related to the small Maori population.

On the whole, the performances of the New Zealand laboratories are good in the Terasaki, Aseatta and local quality assurance programmes. Significantly, we are normally in complete agreement with the typing of the broader "public" antigens. The frequency of discrepancies in defining splits is almost non existent and from the practical application this is important as it at least enables us to exchange kidneys with confidence based on the matching of such antigens. Since the New Zealand kidney recipient pool is so small, it is necessary to take the antigen cross-reactivity into account each time we do a direct cross match, otherwise we may never find appropriate recipients for transplants.

Percentage inadvertence for New Zealand quality control

Includes:

1 Mis-typing of antigen
2 Failure to "split" antigen
3 Incorrect splitting of antigen
4 Missing antigen
5 Finding an antigen where there should be a "blank"

Centre	Discrepancy	Total Number Antigens Tested	% Percentage Discrepancy
1	0	40	0
2	13	64	20
3	6	60	10
4	10	64	16
5	2	64	3

Antigens not detected or identified incorrectly are counted as an error. It must be noted however, that there are often valid reasons for the non-detection or non-reporting of certain antigens or splits; some laboratories do not have the facilities for defining certain splits. Therefore, it is up to each individual laboratory to draw up its own conclusions concerning these results. It is important that all results obtained are reported and not only selected ones.

Correlation of 1988/89 New Zealand Quality Assurance. Results — 32 antigens from randomly selected donors representing the New Zealand HLA Data Base.

Well defined Antigens		Developing Antigens		
90-100%	80-89%	70-79%	40-59%	<40%
A1	A28	A23	A32	
		A25		
		A29		
A2	A30	A31		
A3				
A11				
A24				
		B35	B5	B57
A26	B14	B39	B18	B60
B7	B49	B51	B21	
			B40	
B8	B27	B62	B50	
B13				
B44				

HLA laboratories are expensive with relation to staff, equipment and reagents. This can also apply to quality assurance programmes — what justification can we supply to managers, with a non clinical or scientific background, for the continued participation in such programmes?

Quality control and performance testing are now an integral part of the day to day operation and management of all tissue typing because of the inherently complex nature of the antigens defined and the reagents employed. Procedures have to be developed to ensure that each stage is carried out with maximum safety, maximum reproducibility and minimum error.

These final remarks concern the staff from the newest laboratory assistant to senior and medical staff. ALL LEVELS SHOULD LOOK ON QUALITY CONTROL AS ROUTINE, AIMED TO PROVIDE THE BEST POSSIBLE SERVICE. Every endeavour should be made to ensure that it is not regarded as an harrassment.

BOOK REVIEW:

"Manual of Medical Laboratory Immunology"

Linda E. Miller, Harry R. Rudke, Julia E. Peacock, Russell H. Tomar
Second Edition, 1991
Publishers - Lea and Sebiger

At last an Immunology text book with strong emphasis on the technical aspects of laboratory diagnosis. This "hot off the press" edition is the second produced by a group of American authors working in medical laboratory science.

The information on basic immunology is clear, concise and expressed in simple language, with good diagrams. This section provides a useful introduction to Immunology.

The technical sections are detailed (step-by-step methods for some techniques) with superb diagrams (eg. agglutination etc.). Some of the tests described have been modified or replaced by more modern tests in some labs in New Zealand, but are still valid techniques for immunodiagnosis.

The inclusion of information on cardiolipin antibodies and HIV testing will be of great interest. However, readers should be aware that information in these areas is being updated constantly in journals. The section on the collection and handling of specimens is a welcome addition to this type of book.

At $99.00 - including GST (November 1990) this is an affordable book providing an excellent overview of applied Immunology for students taking Immunology or closely-related subjects at Certificate, Diploma and Specialist levels. QTA students will find the basic immunology, and some of the technical sections, well-suited to their requirements also. A must for all laboratories using immunodiagnostic techniques.

Limited supplies are available from:
Medical Books (NZ) Ltd, 8 Park Avenue, Auckland 3.
Telephone (09) 733-772/733-773 Fax (064-9) 733-282

Reviewed By: Gillian McLeay
Convenor, Immunology Specialist Interest Group (ISIG)

BOOK REVIEW:

"Medical Microbiology Synopsis"

Donald M McLean and John A Smith 1991
Published by Lea & Febiger Philadelphia and London
ISBN 0-8121-1304-7

This book is designed for use as a guide for medical and health science students in their pre-clinical years at the University of British Columbia.

It is published in a soft-cover edition and the 300 pages are divided into the following parts:

General Microbiological Concepts
Bacterial Infections
Viral Infections
Fungal Infections
Parasitic Infections
plus one chapter on Immunisation which deals with vaccination schedules

The 45 chapters are brief, with clear descriptions and definitions. In the chapters on bacterial infections each organism is described in biological terms, clinical and epidemiological aspects, laboratory diagnosis, treatment and prevention.

This book will have limited appeal to medical technologists who are working in a microbiology laboratory, but as its title implies, it does not purport to be a reference text or a diagnostic laboratory bench book, with the only mention of diagnostic methods being restricted to types, and collection, of specimens.

However there are many clear diagrams, 23 colour plates and useful tables of information. It may well be a good revision book for medical technology students studying microbiology, as well as the medical and health science students that it was written for.

Reviewed by Jim Clark,
Tutor Technologist, Auckland Institute of Technology.

COURSE ANNOUNCEMENT

INTRODUCTION TO MOLECULAR GENETICS AND GENE MANIPULATION

A one week non-credit introductory workshop will again be conducted in the Microbiology and Genetics Department of Massey University during the May Holidays 1991 namely 20-24 May. The aim of the course will be to provide for those people who may have a potential professional interest in the subject, a working introduction to the powers and limitations of the techniques. This year we shall endeavour to focus on topics in applied molecular genetics relevant to agriculture and medicine. Lecture material to be covered will include DNA and genome structure, the molecular genetics of plasmids and transposons, basic strategy of recombinant DNA research (both basic and applied) and the quasi-legal aspects of "genetic engineering". Practical work will include plasmid crosses, transposon mutagenesis, plasmid isolation, restriction enzyme mapping, DNA ligation, PCR and RFLP analysis. Background assumed will be the equivalent of Introductory Genetics and Introductory Biochemistry (200-level).

Although Boehringer-Mannheim's continuing their generous sponsorship for this course in the form of biological materials, there will be a charge of $325, in order to cover the cost of additional materials and facilities. Accommodation will have to be arranged off campus, as unfortunately, extramural fully books the campus accommodations. The enrolment will be limited to 24 (the capacity of the teaching laboratory). For further information and an enrolment form, please contact:

Assoc. Prof. Eric Terzaghi
Department of Microbiology and Genetics
Massey University
PALMERSTON NORTH

NEW ZEALAND MEDICAL LABORATORY SCIENCE TRUST ANNUAL REPORT

N.Z. MEDICAL LABORATORY SCIENCE TRUST

TRUST OFFICE
P.O. BOX 12-260
WELLINGTON
Phone (04) 723-431
Fax (04) 727-181

The climate of severe economic restraint continuing within the country also continues to have its effect on the ability of the Trust to attract funds. Original hopes of large sums of money have evaporated but nevertheless the Trust has reaffirmed its intention of continuing even though the growth rate is small.

Funds in smaller amounts continue to become available from the Institute and its members and the Trust would record special thanks to Institute examiners who channel their examination fees to the Trust.

Recently we have re-approached science houses and firms and we are currently investigating the feasibility and viability of advertising in "Law Talk" to inform lawyers of the Trust so that they can detail clients seeking worthy causes of the Trust's existence and objectives.

The Trust have felt that there should be a demonstrable activity each year and have accordingly resolved that we grant up to four $500 grants each year and that there be a closing date for applications of 31st May each year.

During this year three grants have been made:

1) To Stephen Smith (Waikato) to enable him to present findings of a survey at the N.Z.I.M.L.S. conference.
2) To Mr Stephen Henry to assist him in travelling to Goteburg to further research on the Lewis system.
3) To Mark Staveley to assist him to join a delegation of cytotechnologists who attended the Soviet Union to review cytological practices and investigations in the U.S.S.R.

Other expenditure has been kept as low as possible including holding the required annual Trustee meeting by teleconference.

The Trust is registered now under the Charitable Trust Act but is not yet registered with the Inland Revenue but this is proceeding and should be completed in the near future.

The audited accounts up to end of December 1989 are appended. The Trust year runs to the end of the calendar year but the annual Trustee meeting is held in July. The Trust will investigate means of releasing the audited accounts much earlier so that up to date figures are available to interested parties.

On behalf of the Trustees,

D.J. Philip
(Chairman)

Trustees:

J.S. Beattie
B.T. Edwards
C.H. Campbell
W.J. Wilson

NEW ZEALAND MEDICAL LABORATORY SCIENCE TRUST (Inc.)
INCOME STATEMENT
FOR THE PERIOD 22 JULY 1988 to 31 DECEMBER 1989

INCOME RECEIVED		$2,679.55
Donations	1,837.00	
Interest	842.55	
LESS EXPENDITURE		
Legal Expenses	275.00	275.05
Bank Fees	.05	
NET INCOME		$2,404.50

NEW ZEALAND MEDICAL LABORATORY SCIENCE TRUST (Inc.)
BALANCE SHEET
AS AT 31 DECEMBER 1989

ACCUMULATED FUNDS		
Balance as at 22 July 1988	6,039.79	
add Net Income	2,404.50	
		$8,444.29
Represented by:		
Current Assets		
ANZ Banking Group		$8,444.29

AUDITOR'S REPORT:
To the Trustees of the New Zealand Medical Science Trust (Inc.)

I have examined the financial records of the New Zealand Medical Laboratory Science Trust (Inc.) and have received such explanations and carried out such procedures as I considered necessary.

Subject to the possible effect of the limited control over the recording of income from donations and fundraising, in my opinion, the above financial statements give a true and fair view of the financial position of the Trust as at 31 December 1989, and the results of its activities for the period covered by those statements.

David R. Gordon

Palmerston North
17 January 1990.

NEW ZEALAND MEDICAL LABORATORY SCIENCE TRUST (Inc.)
NOTES TO THE FINANCIAL STATEMENTS
17 January 1990

(1) **General Accounting Principles**
Accrual accounting has not been used in the preparation of these statements, they have been prepared on a cash accounting basis. Reliance has been placed on the fact that the Trust is a going concern.

(2) **Comparative Figures**
The financial Statements record the activities of the Trust covering a period of 17 months. Statements for a comparable period are not available and therefore have not been provided in these statements.

THE NEW ZEALAND JOURNAL OF
MEDICAL LABORATORY TECHNOLOGY

Index to Volume 44, 1990

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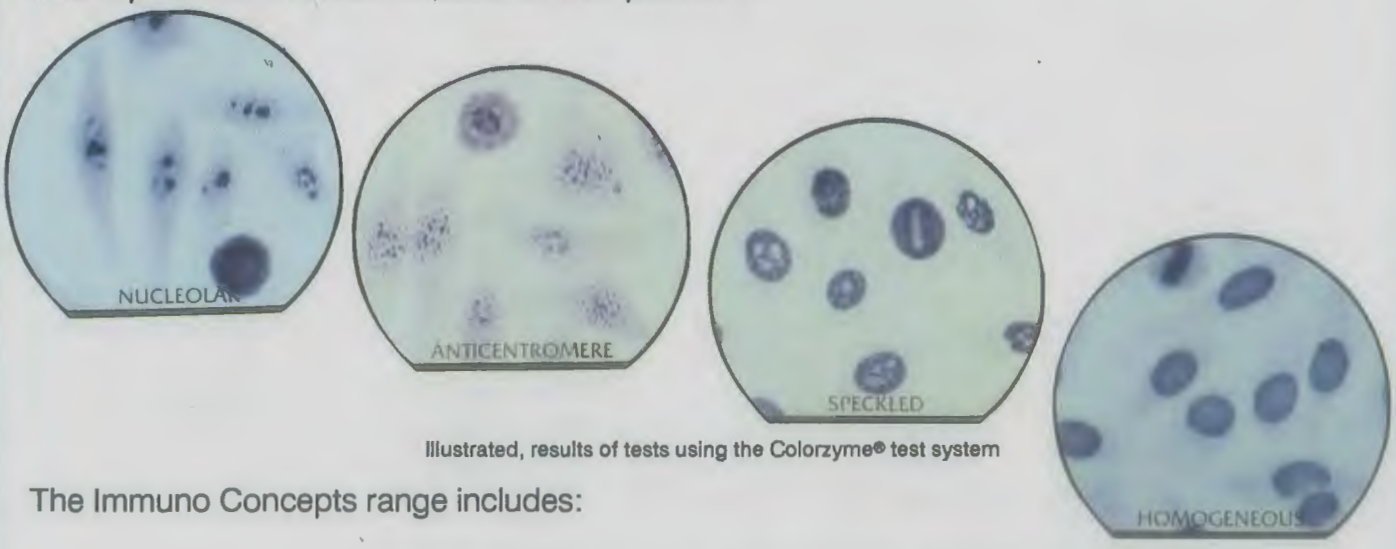

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Precipath® Fructosamine Cat. No. 1174 118	3 x 1 ml
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Telex: 63103 BMNZ
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