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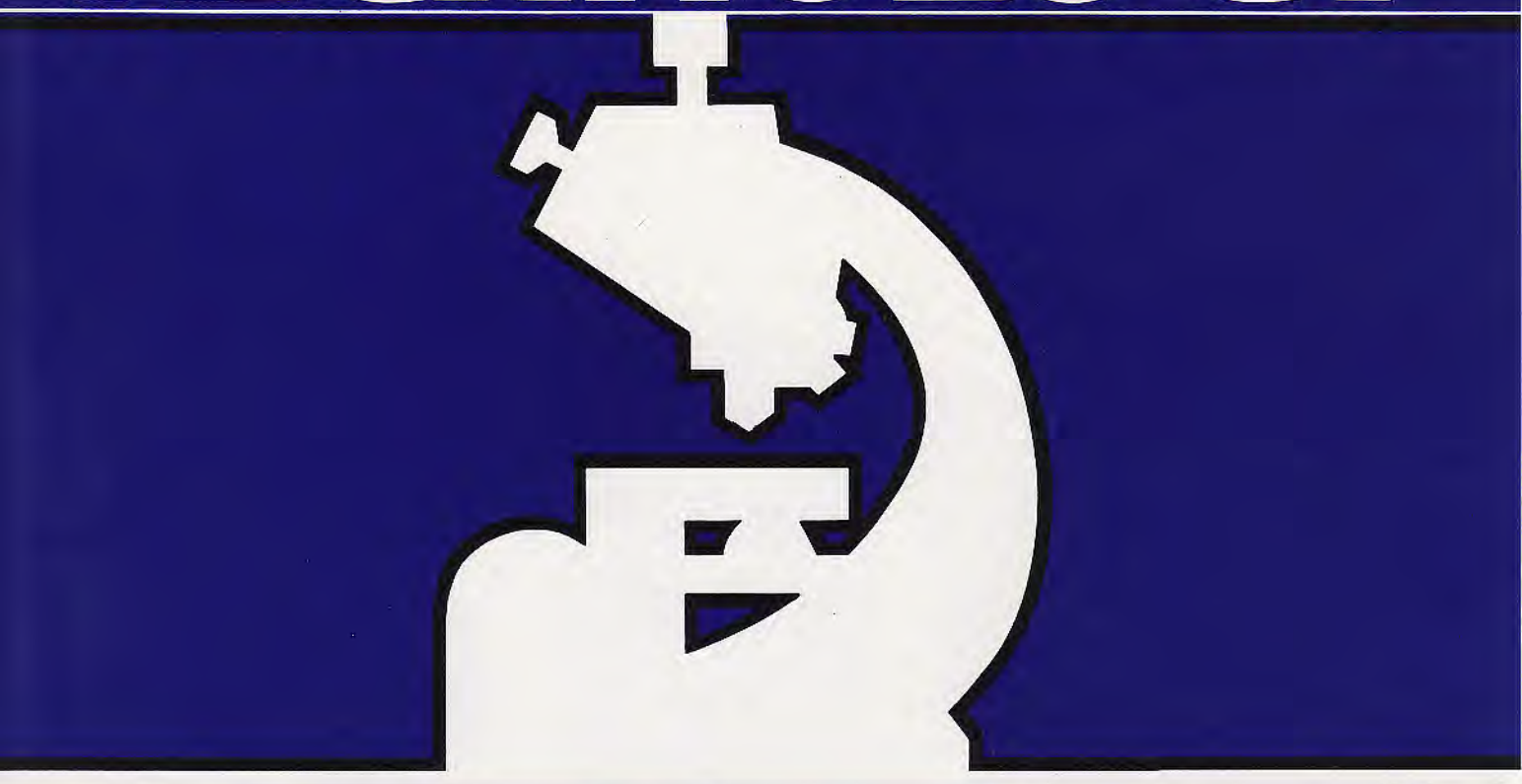

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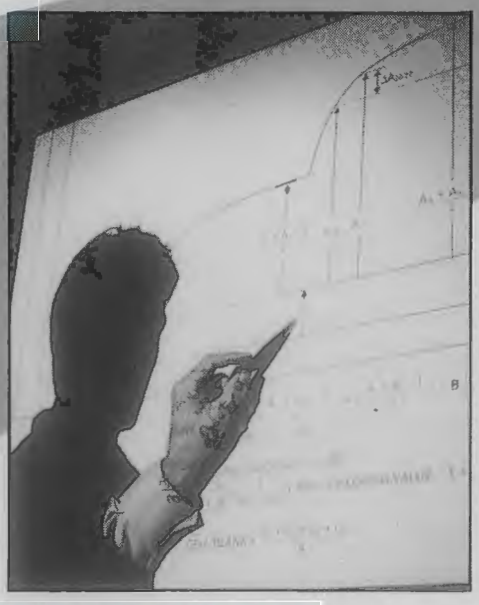

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IMPORTANT LETTER TO THE EDITOR

Dear Sir,

re: 1988 examinations

The letter over the signatures of three Auckland trainees addresses a number of problems some of which are of concern to the Medical Laboratory Technologists Board as well as the trainees.

I have asked the senior examiner in Haematology for 1988 to reply to some of the direct criticisms of the 1988 examination and her reply is as follows:

— Comparison of Specialist and Certificate level Practicals.
These were two very different examinations with different formats and different expectations. Therefore it is not valid to try and compare them.

— Relevant information supplied.
It was felt by the examiners and moderator when the paper was set that sufficient information was supplied to guide the candidates toward the appropriate tests to be performed.

— Inclusion of unstained slides.
Unstained slides were provided because of past criticism that when stained slides were used the quality of staining varied.
We felt if the candidates stained their own slides we would overcome this. All of the films 1C were scanned for presence of microfilaria which can easily be detected in an unstained film.

— Inclusion of additional instruction pages.
It is impossible at the time of setting the examination paper to foresee what additional instructions may be required, so additional information must be sent at the time of examination. Each sheet was clearly labelled with the number of the question for which it was to be used. We are sorry if the candidates found it confusing. At the time, we felt it was less confusing to do it that way than to try and fit all of the information on one sheet.

— Blood samples being 24 hours old.
It is not feasible to send samples to all candidates around the country and have them arrive in time for the examination without them being 24 hours old. Therefore the tests we required to be performed were possible on 24 hour old blood. In the laboratory situation it is often necessary to use such samples, where another is not available or the sample is referred from another centre.

— Automated printouts being given instead.
Although in the past automated printouts have been provided as an interpretive exercise in their own right in this situation it was felt that to do so may disadvantage candidates not familiar with the instrument used.

— Inclusion of an unstable haemoglobin sample.
Unstable haemoglobins are in the syllabus, the test is routinely performed as part of a haemoglobinopathy screen. It is possible to complete the test within the four hours allowed for the examination.
We agree that the result is usually negative but did not feel that it was inappropriate to include a positive result in the examination.

— Use of a group of screening tests.
The examination was designed to test the candidates knowledge, not their ability to perform a range of screening tests. Information leading them towards the correct test to be performed, including a haemoglobin electrophoresis strip to be interpreted, was provided.

— The candidates time allocation for the examination.
Part of the examination process is to assess the candidates ability to organise their time to enable them to complete the examination within the time available. In several centres the candidates are required to use laboratories in different buildings. How this is organised is left to the examination supervisor but I understand that at Auckland Hospital extra time was allowed for the candidate to travel from one building to another.

Further to that answer I would like to point out that the board has been unhappy about practical examinations for some time and is intending to move to mastery asessment techniques in 1990. The log books for this are currently being prepared and should be available before the end of the year. Many of the problems alluded to by the writers should then disappear.

In regards to partial passes this decision had been promulgated by Newsletter (MLTB) well before and if the candidates were only aware of this when they received their results the Board cannot be held responsible for that. The question as to whether partial passes should have been reintroduced for 1988 was considered by the Board but it was felt that more rather than less confusion would have occurred if an "on-again/off-again" policy had been adopted.

Finally I would like to encourage all laboratories and students to make use of the examiners reports. Unfortunately because of the infrequency of Board meetings those are not available until after the February Board Meeting but I believe are still of real value. Many of the questions addressed by your correspondents were in fact answered in the examiners report.

Yours sincerely,
D.J. PHILIP,
CHAIRMAN
MEDICAL LABORATORY TECHNOLOGISTS BOARD.

44th ANNUAL SCIENTIFIC MEETING N.Z.I.M.L.T.

ABSTRACTS FOR 1989 NZIMLT SCIENTIFIC MEETING

You are invited to submit 15-20 minute papers for the above meeting.
Abstracts must be typed in single space type in less than 250 words.
These must be free of grammatical and typographical errors.
The original and two photocopies should be submitted.

ABSTRACTS SHOULD INCLUDE:

Title (In Capital Letters)
Author's Names
Abstract Content

Also include presenting Author's name, address, telephone number and any visual aids required e.g. 35 mm Slide Projector, Overhead Projector.

Abstracts should be submitted before 14 July, 1989.

The Conference Secretariat,
Pathology Department,
Taranaki Base Hospital,
NEW PLYMOUTH.

Poster presentations will also be accepted for the conference. The submission date is 14 July, 1989.

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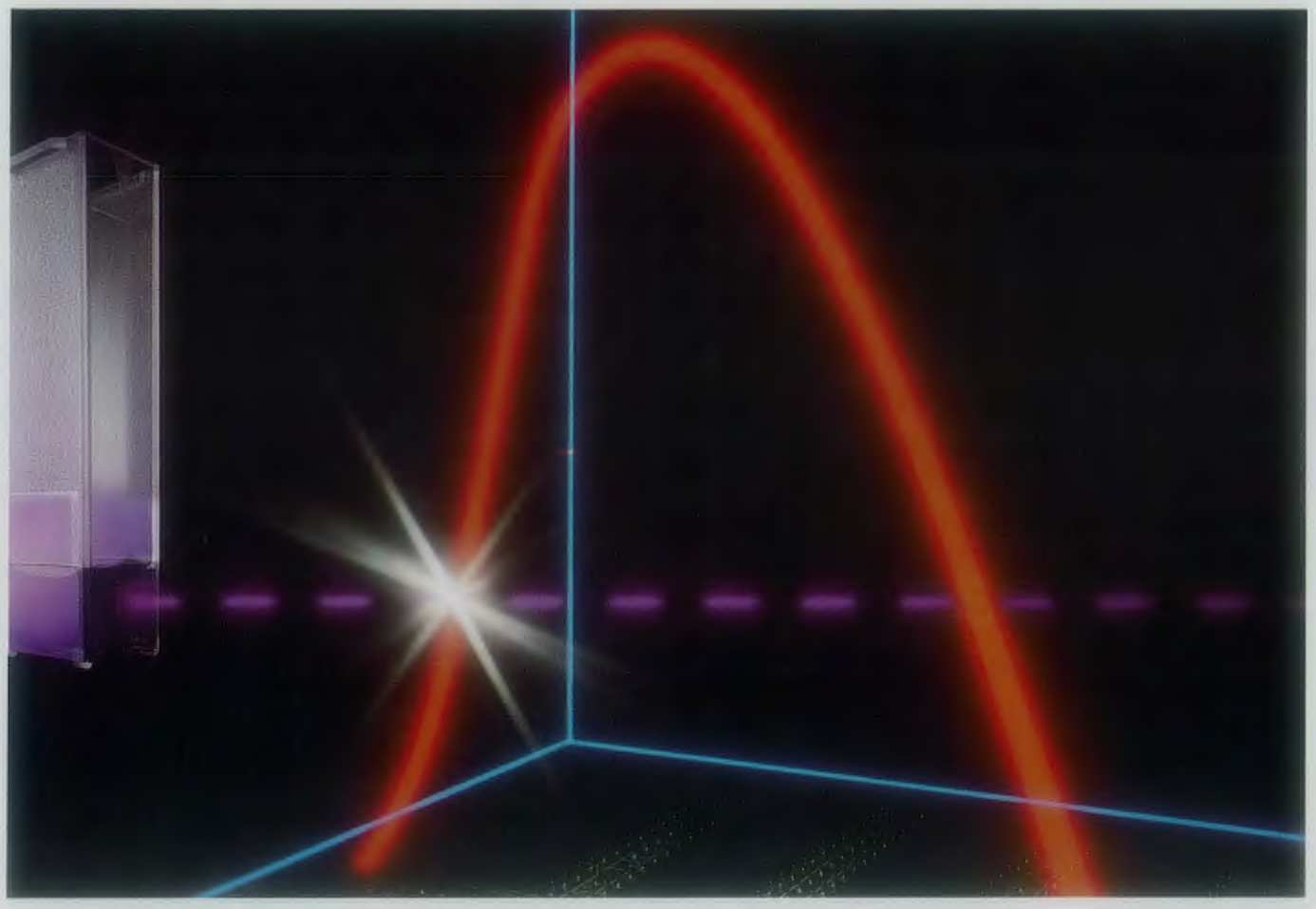

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DIRECTIONS FOR CONTRIBUTORS

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, D. Dixon-McIver, Biochemistry Laboratory, National Women's Hospital, Auckland, New Zealand, or The Editor, P.O. Box 35-276, Auckland 10, 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, 48 Towai St, St Heliers, Auckland 5, Phone 555-057.

DATES OF PUBLICATION

The months of publication for 1989 are March, May, August and November.

This Journal is abstracted by: Biological Abstracts, Chemical Abstracts, Cumulative Index Nursing and Allied Health Literature, Current Clinical Chemistry, Hospital Abstracts, Institut nautchnoi informatsii.

T.H. Pullar Address

John Whitely
President, AIMLS

It was with real pleasure that I accepted the invitation to deliver the 1988 T.H. Pullar Address.

But I did ask myself at the time why you chose to recognise someone who was not one of your members in this way. Why not a colleague? Why not one who has worked hard and long for your profession?

Thomas Henry Pullar, known universally as "Thos", was a man short of stature but tall of principles. He recognised the emergence of a new profession, medical laboratory science, and did much to help it to establish and grow — a true friend and advisor to the profession. To quote Bob Allan in 1980 — "suffice to say that he helped us all he could".

That is why you honour his memory each year.

I apologise to those who expected my speech to be broader. You know, we both speak a form of English and both have our critics.

To us, you practice an economy, not of words, but within words. We are described as "ocker" or of using "Waynespeak" and you of "Trevorspeak". Those responsible for the Monty Python shows refer to all Australians as "Bruce" The main highway from Brisbane to the deep north of Queensland is named the Bruce Highway. How appropriate, you might say, yet this is in a State whose long standing Premier until recently was a former New Zealander. It may seem surprising to some that we have met only twice officially. The first occasion was as recent as 1982 in Christchurch — the first South Pacific Congress.

Yet it is not surprising really that we have taken so long to get together. No doubt, you have had difficulties in the past in communicating and even journeying between your two islands.

We have had to overcome not only vast distances but state individualities and jealousies. For example, in 1937 — only 51 years ago — when poliomyelitis began to hit Victorian school children, New South Wales attempted to quarantine the state by posting hundreds of police along the Victorian border. The attempt failed, of course, and the disease spread to New South Wales and to Queensland.

Even if we, as an Institute, had wished to overcome these state jealousies, we still faced the problem of poor communications compared to today, so that very necessary personal contact was all but non-existent. Our first national meeting was not held until 1960 and only every three years after that until 1975 when interstate travel became less arduous.

In fact, the very structure of our Institute was state-based. The Executive were all from the one state capital city and Council consisted of state representatives. This allowed factional interests to impede any real progress towards unity.

It was not until the change in structure of our Institute in 1984 that we truly became a national body. The present three members of the National Executive reside in different states, yet modern communications enable us to overcome the problems of separation by distance, helped considerably by the efficiency evident in our National Office.

So at last we are a national body and we can look beyond our own boundaries. Yet again you have shown the initiative to invite the President of the Australian Institute to deliver this address.

The relationship between New Zealand and Australia in general terms will strengthen in the future. Travel between our two countries will be as unexceptional as a local bus ride. Daily commuting will be standard fare in business.

One can visualise, on a clear day not far into the twenty-first century, standing on Mount Victoria high above Lambton Harbour watching the arrival of the noon shuttle from Sydney to Wellington to pause briefly before flying on to Cape York to connect with the HOTOL service to London, a 45 minute journey — actually 63 minutes terminal to terminal — or the slower and cheaper 15 hours on the Histar.

Of course, all major cities will be connected by air to Cape York and a new multi-lane highway will extend from Brisbane, re-named the Trevor Wayne Highway, running alongside the VFT high speed train track from Melbourne carrying the Golden Emu, the pride of Railways of Australia.

These shuttles are now so commonplace that they attract little attention from the staff of the new parliament house on Mount Victoria, but some visitors will stop to look and marvel and also to catch a glimpse of the Silver Moa supertrain flashing into the Cook Strait Tunnel on its three hour journey along the great rail spine that links the major cities of the North and South Islands.

All this is pure speculation, you may say, but the ties that have been growing for almost 150 years will increasingly demand communications at the highest level, and this includes travel between our two countries and within them.

Even now, some 500,000 people travel between the two countries annually. It is clear, in these closing years of the twentieth century, that the Tasman is narrowing faster and the human bridge across it is growing wider than most of us realise.

The Closer Economic Relations (CER) Treaty, scheduled for completion in 1995, now appears to be heading for much earlier ratification. The last barriers to free trade will be taken away by July, 1990.

All this of course is not only desirable but necessary to counter the effect of the CER forged by the European communities through the Treaty of Rome in 1957. This is rapidly bringing political union to Western Europe with the prospect of a single unified market in 1992.

It will almost certainly be with New Zealand and Australia, although national sentiments run strongly against any complete union. Can you imagine a touring Rugby side called the Not-Quite-All Blacks?

Some feel that a total Western European union will not occur for the same or similar reasons, but even proud France now finds her sovereignty subtly modified as each year passes.

The new economic union has additional ramifications for both of our nations. Academics, business people and officials see some kind of common currency flowing from CER as well as a trans-Tasman Reserve Bank, a customs union and some constitutional lawyers argue that there is no great impediment to an Australian-New Zealand High Court.

We will remain strong allies, whether or not New Zealand, under future governments, continues to pursue the nuclear-free policies of the present government, and government will change if democracy has any meaning — it is only a question of time.

To meet the economic challenge of the European union, we will be forced into a wider union with other South East Asian nations, notably Japan. The CER we have developed will enhance our position in such a community.

What has this to do with medical laboratory science?

Let me take you back to 1982 and the first South Pacific Congress. In his opening address, Desmond Philip delighted us with his presentation on geological and geographical facts — and fiction — but delivered a warning and a plea.

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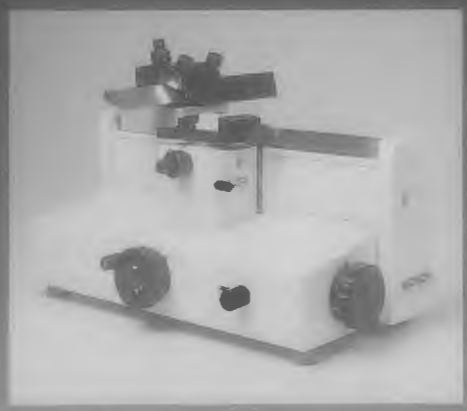

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Guidelines For Prospective Applicants

Purpose

1. Money donated in New Zealand for a memorial to Sir Winston Churchill forms a trust fund administered by a Trust Board of nine persons appointed by the Governor-General. The income from the fund is used to enable people to study and travel so that their contribution to the community and their trade, industry, profession, business or calling would thereby be increased. The Trust Board welcomes any donation, gift, or bequest to help it in its work.

2. The Winston Churchill Memorial Trust Act 1965 provides in section 18 that the Trust Board may as it thinks fit apply the income of the fund to benefit the community by making grants or awards or providing fellowships to qualified persons who will contribute to the general advancement of any occupation, calling, trade, business, or profession carried on or intended to be carried on in New Zealand, or to the benefit in general of New Zealand, or to the maintenance or advancement of the Commonwealth as a beneficial influence in world affairs.

Objective

3. To enable responsible people in all walks of life with potential for leadership to undertake projects in accordance with the Trust's purpose thereby increasing awareness generally about the memorial purpose of the Trust and to encourage support for it.

Eligibility

4 The Trust Board is not empowered to give scholarships and the assistance it offers is not intended for scholarship or gaining academic qualifications. Provided, however, that an eligible project which benefits New Zealand may include a course of studies which is secondary to but part of the primary purpose of benefit to New Zealand.

5. Applicants must have a good background of ability and experience in their project subject and the potential to influence developments in that subject. Formal educational qualifications are not necessary.

6. Applicants must be either,
   (a) New Zealand citizens, or,
   (b) A person who is ordinarily resident in New Zealand
   (c) other persons who will visit New Zealand.

Fellowships

7. They are for travel, typically short term of less than three months duration, for intensive investigations, and are subject to any conditions the Trust Board may consider necessary including the following:

   Conditions:
   (a) Recipients will be required to accept in writing an offer by the Board and any conditions attaching thereto including the liability in the event of failure to comply in whole or in part with any of the conditions to the satisfaction of the Trust Board to refund the fellowship or such lesser amount as the Trust Board may determine.
   (b) Projects are to be carried out in the year after the year of application.
   (c) Recipients must return to their position on completion of their project.
   (d) Recipients must submit 15 copies of a report on their project within six months of their return.
   (e) The decisions of the Trust Board are final.

   Value:
   (f) The all inclusive costs of travel which cannot be met by the applicant will be covered by a grant from the Trust fund provided that applicants are expected to meet not less than 20% of the total estimated costs of travel but applicants may contribute more should they desire to.
   (g) In special circumstances the Trust Board may grant more than 80% assistance provided applicants justify their inability to meet at least 20%.
   (h) The Trust Board does not accept any responsibility for increased costs.
      N.B. There is a limited income from the Trust fund. The Trust Board's aim is to distribute this income as widely as possible for the greatest benefit to New Zealand. The greater the effort by applicants to meet their travel costs then the greater will be the number of applicants whom the Trust Board can help.

   Tenure:
   (i) Fellowships are to be taken up in the year after the year of application. Successful applicants will be advised of an offer by the Trust Board in November or early December and if accepted the applicant will then be required to prepare a formal itinerary for approval before the fellowship is paid to the applicant.
   (j) Fellowship projects may be in New Zealand or overseas.

   Applications:
   (k) **Applications must be typed on the forms provided by the Trust Board and lodged at the Board's office, or postmarked, no later than 31 July. Late applications will not be accepted.**
   (l) Applications must be explicit and without appendices. All text must be confined to the spaces provided in the application forms.
   (m) The closing date for references is also 31 July. Late references may result in exclusion of the application from consideration.

Grant and Awards

8. The Trust Board gives priority to fellowships. If you have a proposal which complies with the purpose and objectives indicated but seems not to meet all the requirements for a fellowship then you should complete the standard application form outlining why you need assistance, what the assistance is for, and indicating how New Zealand will benefit. The Trust Board may give grants or awards to persons only, not organisations, and does not give assistance to acquire assets or property, nor for administrative or operational support.

General

9. Applications and any enquiries should be made to:
   The Secretary
   Winston Churchill Memorial Trust Board,
   P.O. Box 10-345
   WELLINGTON.

10. The Trust Board places great importance on the benefits for New Zealand. Applicants must therefore state clearly what the benefit will be and how they are qualified to discover and promote that benefit.

He hoped that, unlike a volcanic mountain here in the North Island, the meeting did not produce a lot of ephemeral smoke and steam but nothing more lasting. His hope was, from the meeting of our two Institutes, that action would occur and that it would be the forerunner of other combined efforts by our countries in the South Pacific area.

The meeting established contracts, enabled us to see that there were common interests, made us wonder why we had not got together before and generally laid the foundations for what we now see emerging.

But it was a magical moment, over breakfast at the time of the second Congress in Sydney two years ago, when those around the table realised how much we had in common and how much we wished to work together.

It became the longest breakfast I have ever had, and the most enjoyable and memorable.

Since then, we have not only exchanged correspondence but have worked with you in providing assistance to smaller countries in the South Pacific region and we, the AIMLS National Executive, have joined you here, at your invitation, for your meeting and met with your Council to look for other ways to strengthen our bond.

Was that morning in Sydney in 1986 the time we will remember as the birth of CPR — Closer Professional Relations? Four years since Des Philip's address when CPR was conceived. A long gestation period it may have been, but it is to be hoped that the infant will develop rapidly and strongly.

Let us now look at the differences in structure between our two Institutes. I have already given you some idea of the administrative structure of the AIMLS and you know yours. I don't think it matters much that there are differences in this area essentially, as long as it does not prevent us from working together, and I cannot see that as a problem. But membership requirements, including entry qualifications, are important and we must move closer in this respect.

Some twenty years ago, largely due to the vision of two of our more prominent members, John Foley and the late John Saal, we began a move away from the established professional qualifications issued by our Institute to a qualification from the new colleges of advanced education — a degree in applied science.

So it was that, as of January 1974, the minimum requirement for corporate membership was a batchelors degree in applied science or a degree in science in appropriate subjects from a recognised university.

Last year, we introduced a new category of membership — Intermediate Member — a non-corporate class to recognise the very important role of the technical officer, those with an associate diploma from a recognised college resulting from a minimum of two years study or the part-time equivalent. Named Intermediate Member to encourage those with the ability and the opportunity to upgrade their qualifications to degree status while recognising their years employed in a technical capacity should they proceed to the Fellowship.

It is interesting to note that the IMLS in the United Kingdom is now considering a Batchelor of Science entry and the need for a second tier qualification. No doubt the latter is being forced on them by economic considerations and the ever increasing sophistication of instrumentation. At the risk of appearing impertinent, I suggest you should pursue with great vigour the establishment of an appropriate degree course at Otago University.

It is essential that you make this qualification your requirement for corporate membership. In this way, you will join us as we meet new challenges and changes in direction. Without it,change may be difficult.

I also suggest you should look to replacing your QTA professional qualification with one from a statutory educational body. You have this second tier well established but you must look to a change in its status. With technological change, new professions and sub-professions challenge the expertise of the traditional profession. We may criticise those who may have been described as professional colleagues of Thos Pullar, but lack his professional largesse. Yet we also must be careful not to similarly adopt a stifling "what we have, we hold" attitude.

Further to that, we have begun to broaden the base of our corporate membership to cope with changes in laboratory boundaries. Again I refer to the IMLS which, in a recent review, questioned the wisdom of not including physicists in their membership.

It was Francis Bacon who wrote: "He that will not apply new remedies must expect new evils".

But we, our Institutes, must maintain our dialogue to ensure we do not move in different directions.

So where will our Institutes be when those trans-Tasman shuttles are so commonplace that most people seldom bother to look skyward? When commuting from Wellington to Auckland or Christchurch is so easy and rapid that you talk about the old days when you had to fly there instead of taking the Silver Moa?

Will we still be going our separate ways while maintaining a few common projects?

Will we each be prominent bodies within the new Oceanic or South East Asian economic community?

Will we be a unified professional body — the Oceanic IMLS or the South Pacific Institute of Clinical Laboratory Scientists?

Or will we have ceased to exist at all?

That baby, conceived in 1982, born in 1986 is growing. It needs to be nurtured and guided if it is to amount to anything when it grows up. I am sorry if I leave you with questions. To understand the situation and then supply the answer requires genius and I suffer from a serious shortfall in that area.

But you — we — must question and be prepared to change, or we have no future.

The Evolution and Performance of a Modified Anti-HBc IgM Detection Method

Paul M. Austin MSc (Hons), Ian W. Steed ANZIMLT
Diagnostic Serology Laboratory, Auckland Regional Blood Centre, Auckland

Abstract

Modifications to a commercial enzyme immunoassay for anti-HBc IgM are described. Use of discriminator panels and clinical testing demonstrated that the modified technique has equivalent sensitivity and specificity to the commercial method. The implementation of the modified assay to the range of serologic tests for viral hepatitis performed in the Diagnostic Serology Laboratory, Auckland Regional Blood Centre (ARBC) has resulted in an improved diagnostic service at an affordable cost.

Key Words

Anti-HBc, IgM, Corzyme-M, CADS, acute/chronic HBV infection.

Introduction

A primary viral infection is characterised by the production of specified IgM class antibodies (1). This antibody class has been used in serologic assays for detection of acute viral infections (2-3).

In acute viral hepatitis B (HBV) infection, the IgM antibody directed against the hepatitis B core antigen (anti-HBc IgM) can be detected soon after exposure and persists for approximately nine months (4).

Abbott Laboratories (North Chicago, IL, USA) market a solid phase enzyme immunoassay system (Corzyme-M) for detection of anti-HBc IgM in human sera or plasma samples (5). The assay relies upon selection of specific anti-HBc IgM by way of a hepatitis B core antigen (HBcAg) reagent after the initial capture of human IgM from anti-human IgM coated polystyrene beads. The assay has been calibrated to allow differentiation between the acute (high titre anti-HBc IgM) and carrier (low titre anti-HBc IgM) states of HBV infection.

A comprehensive diagnostic service for HBV serology should include an assay for anti-HBc IgM (1,6-7). The assay should be performed on all hepatitis B surface antigen (HBsAG) positive samples and those where symptom expression may be attributable to HBV infection.

The aim of the present work was to modify the Corzyme-M assay such that an assay with equivalent sensitivity and specificity would be obtained and could be used to screen the aforementioned groups of clinical samples for anti-HBc IgM at a reduced cost.

Materials and Methods

Modified Corzyme-M Method (carrier acute differentiation system)[CADS]

Rabbit anti-human IgM (μ chains)[Dakopatts, Glostrup, Denmark] was diluted 1 x 10^{-5} in 0.05M Na_2CO_3/$NaHCO_3$ buffer (pH=9.6) and wells of a PVC microplate (Dynatech Laboratories, Virginia, USA) were coated with 100 μL of the solution. The coating procedure was completed by standing covered microplates at room temperature (RT) for 2 hours, then for 48 hours at 4°C.

Prior to use microplates had the coating solution removed and blocking of unbound sites was performed with 0.1% polyvinylpyrollidone 350 (PVP) for 30 minutes at RT (8). After post-coating microplates were washed three times using 0.05% Tween 20 in 0.9% saline (wash solution).

Test samples and human sera negative for anti-HBc IgM (as assayed by Corzyme-M)[negative control] were diluted 1 x 10^{-3} using 0.1% BSA in phosphate buffered saline. The positive anti-HBc IgM preparation (Abbott Laboratories) was not diluted. One hundred microlitres of test samples and controls (two negative; three positive) were added to designated microplate wells. Microplates were sealed and incubated in a humidified chamber for 2 hours at 37°C followed by five washes and the addition of 50 μL of HBcAg reagent (Abbott Laboratories) to all wells. A fresh plate sealer was applied and incubation was performed at RT for 16 to 20 hours. The microplates were then washed five times and 50 μL of horseradish peroxidase conjugated anti-HBc (anti-HBc:HRPO)[Abbott Laboratories] was added to all wells. The plates were sealed and incubated in a humidified chamber at 37°C for 2 hours. During the final 20 minutes of this incubation phase a substrate solution (o - Phenylenediamine.2HCL) [Abbott Laboratories] must be prepared and kept away from light. At the end of the conjugate incubation microplates were washed five times and 50 μL of the freshly prepared substrate solution was added to all wells. This was followed by a 30 minute RT incubation in the dark. The enzymatic reaction was terminated using 1N H_2SO_4. Photometric evaluation was performed on a microplate reader (EIA autoreader Model EL310: Biotek Instruments Inc., Vermont, USA) using test and reference wavelengths of 492 nm and 650 nm respectively.

The cut-off calculation for the CADS assay is identical to that used in the Corzyme-M assay (see results section).

Sensitivity

TITRATION SERIES

Two anti-HBc IgM positive (Corzyme-M) sera were serially

Table 1: *Responses (absorbance 492nm) of a positive anti-HBc IgM preparation to dilutions of a rabbit anti-human IgM microplate coating solution.*

Rabbit anti-human IgM dilution factor	Mean absorbance of an anti-HBc IgM positive preparation
2 x 10^{-4}	2.624 ± 6.0 x 10^{-2}
4 x 10^{-4}	2.037 ± 1.1 x 10^{-2}
6 x 10^{-4}	1.611 ± 4.4 x 10^{-2}
8 x 10^{-4}	1.319 ± 1.0 x 10^{-2}
1 x 10^{-5}	1.035 ± 3.5 x 10^{-3}

Table 2: *Variables affecting responses of the CADS assay as determined by an analysis of variance (ANOVA).*

Source of variation	df	SS	MS	F	
Blocks	2				
Anti-human [IgM]	2	2.20x10^{-3}	1.10x10^{-3}	(2,71)	0.234^{ns}
[BSA]	2	1.03x10^{-2}	5.15x10^{-3}	(2,71)	1.096^{ns}
Time	3	7.70x10^{-3}	7.67x10^{-3}	(3,71)	1.632^{ns}
Anti-human[IgM]/[BSA]	4	4.01x10^{-2}	4.01x10^{-2}	(4,71)	8.532***
Anti-human[IgM]/Time	6	-2.74x10^{-2}	-4.56x10^{-3}	(6,71)	-0.970^{ns}
[BSA]/Time	6	-2.95x10^{-2}	-4.92x10^{-3}	(6,71)	-6.287^{ns}
Anti-human[IgM]/ [BSA/Time	12	3.77x10^{-1}	3.14x10^{-2}	(12,71)	6.681***
Treatment	35				
Error	71		4.7x10^{-3}		
Total	106				

Anti-human[IgM]: microplate coating concentration (range 1.0-1.2x10^{-5});
[BSA]: concentration of BSA in sample diluent (range 1%, 0.1%, 0.001%);
Time: number of days post-coating (range 1,3,7,10).
df: degrees of freedom; SS: sums of squares; MS: means square;
NS: not significant (P>0.05); *** significant at P>0.001.

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Table 3: *End points (sample/cut-off ratios) of the Corzyme-M and CADS assays after titration of two anti-HBc IgM positive clinical sera.*

	Sample 1		Sample 2	
Titre	Corzyme-M	CADS	Corzyme-M	CADS
$1x10^{-3}$	+ 2.72	+ 2.71	+ 3.62	+ 4.55
$2x10^{-3}$	+ 1.78	+ 1.55	+ 2.94	+ 3.52
$4x10^{-3}$	+ 1.09	+ 1.04	+ 2.19	+ 2.40
$8x10^{-3}$	0.72	0.40	+ 1.71	+ 1.36
$1.6x10^{-4}$	0.49	0.35	0.96	0.79

diluted in normal human serum (NHS) negative for HBsAg, anti-HBs and anti-HBc (radioimmunoassay:Abbott Laboratories). Titres were in the range 1.0×10^{-3} to 1.6×10^{-4}. Diluted material was assayed in triplicate by each test method and end point titres with respect to cut-off values were established.

ANTI-HBcIgM POSITIVE PANEL

Fourteen anti-HBc IgM positive sera (Corzyme-M) were assayed without replication by the CADS method. Sensitivity, mean log sample to cut-off ratio(S/CO) and discrimination ability (DA)[mean log S/CO ratio/standard deviation] was established.

Specificity

BLOOD DONOR SCREENING

Two hundred and twenty-nine randomly selected fresh blood donor sera negative for HBsAg (9) were assayed without replication by the CADS method. Specificity, mean log S/CO ratio and DA was established.

POTENTIAL CROSS REACTING PANEL

Three groups of sera (HAV IgM positive, n=10; anti-nuclear antibody[ANA], n=10; rheumatoid factor[RF], n=10) likely to interfere with the CADS assay were tested without replication.

The RF sera covered a range of titre from 16 to 1024. For each group of sera specificities, mean log S/CO ratios and DA were established.

Clinical Testing

Over a five month period 1486 clinical sera were screened for anti-HBc IgM by the CADS method. Any sera determined as positive by this method were confirmed using Corzyme-M. Specificity and false positive rate were determined for the CADS method. Statistical differences (Students-t-test) between mean log S/CO ratios as generated by CADS and Corzyme-M for confirmed anti-HBc IgM positive sera were established.

Table 4: *Determination of the sensitivity and specificity of the CADS assay by screening three discriminator panels (positive, negative and potential cross-reacting sera).*

	Sera				
	anti-HBc IgM	Blood donor	HAV IgM	A.N.A.	R.F.
No. tested	14	229	10	10	10
No. positive	14	0	0	0	0
No. negative	0	229	10	10	10
Sensitivity (%)	100	NA	NA	NA	NA
Specificity (%)	NA	100	100	100	100
Mean log S/CO±SE	+0.39 ±0.03	-1.189 ±0.01	-1.128 ±0.09	-1.265 ±0.02	+1.224 ±0.03
D.V.	+ 3.43	- 7.57	- 3.68	- 15.97	- 13.00

ANA: anti-nuclear antibody; RF: rheumatoid factor; NA not applicable; DV: discrimination value.

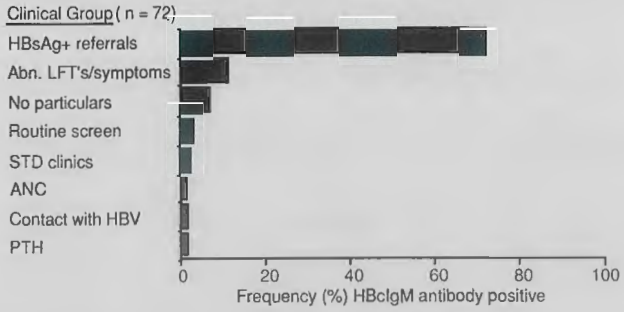

Figure 1: *Breakdown into clinical groups of 72 anti-HBc IgM positive sera.*

Results

Standardisation of CADS

Corzyme-M is calibrated to detect high titres of anti-HBc IgM indicating an acute HBV infection. The cut-off point for the assay is determined by the formula:

1.1 x (Positive control mean O.D./4) + (Negative control mean O.D.)

As the CADS assay uses the same formula and the major variable is the response of the positive control, anti-human IgM was diluted in the CADS assay to a degree that approximated the response in the Corzyme-M method. A survey of 20 runs of Corzyme-M conducted under our laboratory conditions gave a mean positive O.D. response of $1.029 \pm 4.7 \times 10^{-2}$. Dilution of anti-human IgM at 1.0×10^{-5} in the CADS assay produced a mean positive O.D. response of $1.035 \pm 3.5 \times 10^{-3}$ (Table 1). Other factors that were found to affect the CADS assay were (a) the concentration of BSA in the sample diluent and (b) the number of days post-coating of microplates. Although anti-human IgM when diluted in the range 1.1 to 1.2×10^{-5} had no significant effect on O.D. by itself, when associated with the aforementioned factors significant effects on O.D. responses were noted (Table 2).

Sensitivity

TITRATION SERIES

Equivalent end points with respect to cut-off values were obtained for both assay systems after serial dilutions of two anti-HBc IgM positive sera (Table 3).

ANTI-HBc IgM POSITIVE PANEL

Strong O.D. responses were obtained for all panel members when tested by the CADS assay resulting in a sensitivity of 100% and a good discrimination ability (Table 4).

Specificity

BLOOD DONOR SCREENING

No positives were generated by the CADS method following screening of a 229 HBsAg negative panel. On this basis the method was attributed with 100% specificity. There also existed good separation of the negative sera from a cut-off point (Table 4).

Potential Cross Reacting Panel

In the three groups of potential cross-reacting sera, no positive results were generated by the CADS method, although a lower discrimination value was obtained for the HAV IgM sera as compared with the ANA and RF groups of sera (Table 4). An increasing RF titre had no effect upon O.D. values.

Clinical Testing

From the 1486 HBsAg positive sera screened for anti-HBc IgM by CADs and confirmed by Corzyme-M only a small proportion (4.8%) were in an acute phase of HBV infection (Table 5). The vast majority of the acute sera were from either (a) other testing centres in New Zealand or (b) individuals

Table 5: *Performance of the CADS assay in a routine clinical testing situation.*

SCREEN RESULTS(CADS)				
No. tested	No. HBcx IgM+	No. confirmed HBc IgM+	F.P. rate (%)	Specificity (%)
1486	97 (6.5%)	72 (4.8%)	1.7	98.3

CONFIRMED anti-HBc IgM POSITIVE SERA		
Method	CADS	Corzyme-M
No. positive	72	72
Mean log S/CO±SE^{ns}	0.44±0.02	0.45±0.03
D.V.	2.25	2.00

FP: false positive; DV: discrimination value; NS: not significant (>0.05).

presenting to clinicians with symptoms of viral hepatitis in the Auckland region (Figure 1).

Routine clinical testing demonstrated that the CADS assay is likely to produce false positive results in the order of 1.5% to 2.0%. However, in the group of confirmed anti-HBc IgM positive sera (n=72) there was no significant difference (P> 0.05) between the mean log S/CO ratios generated by the two assay systems (Table 5).

Discussion

The usefulness of the anti-HBc IgM marker as an indicator of recent HBV infection is well established (10-15) and there are reports that demonstrate the high sensitivity and calibration of the Abbott Laboratories' Corzyme-M method for discrimination between the acute and chronic HBV states (13-15).

The Corzyme-M method has undergone modification (CADS) to the extent that it can be performed in a microplate format at a considerable reduction in expenditure. The modification was standardised on the response demonstrated by the positive control of Corzyme-M, and, major variables that affect the O.D. responses of the CADS assay were (a) the coating concentration of anti-human IgM, (b) the concentration of BSA in the sample diluent and (c) the number of days post-coating of microplates prior to use. The CADS assay was shown to have equivalent sensitivity to Corzyme-M but during routine use is likely to produce false positive results in the order of 1.5% to 2.0%. The false positive production is not associated with factors known to affect IgM serologic techniques (1), therefore pre-treatment of sera with IgM removing substances such as Staphylococcal protein A or anti-human IgM was deemed unnecessary (16-17). The false positive rate can be attributed to the slightly higher sensitivity of CADS compared with Corzyme-M. In general the CADS method offers good discrimination of anti-HBc IgM positive and negative sera from cut-off points as demonstrated by high discrimination values.

Use of the CADS assay to screen all HBsAg positive sera and, those sera with accompanying clinical details indicative of viral hepatitis is vindicated by the fact that over 80% of the confirmed anti-HBc IgM positive sera fell into these two clinical groups.

In conclusion, the implementation of the CADS assay to the range of serologic tests conducted in the Diagnostic Serology Laboratory (ARBC) for viral hepatitis has enabled a more comprehensive service to be offered at a fraction of the cost if Corzyme-M had been employed for the same purpose. The CADS method becomes more attractive when it is appreciated that acute HBV infection is seen to be a rare occurrence (4.8% of 1486 HBsAg positive sera) which in turn reduces the need to use Corzyme-M in a confirmatory capacity.

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Maori Attitudes to Health: Cross Cultural Communication Considerations for Health Care Workers

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This paper was written as an assignment in Cross Cultural Communication at Massey University for credit towards a Diploma in Business Studies (Dip.Bus.St).

Introduction

This research report was undertaken to research Maori attitudes to health, with a minor reference to diabetes, with a view to:

1) enhance cross cultural communication between predominantly non-Maori health care workers (for non-Maori read Pakeha) and the Maori community and
2) to help Maori diabetics comply with their treatment and medication protocols in a culturally sensitive and acceptable manner.

Research findings show that the Maori community has had a long history of self-help health initiatives (Durie, 1984b, p7). The Maori model of health varies from that of the traditional Western model in that its approach to health is holistic. (Hui Whakaoranga, 1984, p15).

There is a concept of spirituality and a system of emotional involvement.

This differs from the Western model which is orientated towards the physical aspects of health. (Reid, 1985, p3).

The four cornerstones of Maori health are:
— Te Taha Wairua — spiritual wellbeing,
— Te Taha Hinegaro — mental wellbeing,
— Te Taha Whanau — family wellbeing,
— Te Taha Tinana — physical wellbeing,
(Hui Whakaoranga, 1984, p21-22).

This Maori perspective of health is not orientated chiefly towards the health of the individual but toward that of the whanau (extended family).

Maori levels of health are significantly below those of European New Zealanders. (Pomare, 1980, p44). Diabetes is 5.8 times as prevalent in the Maori male population and 2.2 times as prevalent in female Maoris than in the non-Maori population in New Zealand (Pomare, 1980, p34). The traditional Western practitioners of medicine are trying to close the gap in health levels but without taking notice of the culturally different approach to health care of the Maori community, progress will be slow.

New Zealand has some Maori health initiatives which are having a positive effect on Maori health such as the Te Wairua project, Ruatoki mawaka clinic, Whaiora programme at Tokanui Hospital (Pomare, 1986b, p60).

With reference to diabetes, the work of the South Auckland Diabetes Centre attached to the Whaiora health centre, has helped to lead the way in culturally sensitive handling of Maori diabetic health problems (Thornton, 1988).

This report outlines the problems discovered by my research and proposes solutions to enhance cross cultural communication and thus enhance Maori health.

In summary I feel the following areas have to be addressed:
— The provision of more marae and community based health programmes which are run in a culturally sensitive manner with considerable Maori input and leadership.
— An increase in the awareness and exposure of health care workers (HCW's) to the Maori culture and model of health care.
— An increase in the numbers of Maori HCW's.
— Enhancing and developing the cross cultural communication skills of HCW's to help them in working with Maori patients.
— The adapting of present health care practices in hospitals and clinics to take account of Maori cultural sensitivities.

No specific recommendatioins have been made for Maori diabetics as I feel that if the solutions proposed to help Maori health generally are implemented, Maori diabetics specifically will get the benefit.

Discussion and Analysis

1. A History of Maori Health and Health Initiatives

In explaining Waiora, the Maori concept of total wellbeing, Reid (1985, p3) writes, "The oral accounts of our ancestors agree with the first records of Pakeha commentators in that our people were a vigorous and healthy race.

Our wellbeing was a balance between the many facets of our whanau and the world about us". This state of health was not to last for long.

The Arawa chiefs (Reeves, 1987) are quoted as saying last century that, "You brought us your civilisation and you decimated our ranks with strange diseases and modern ornaments." Indeed data from as early as 1860 indicates that Maori health has been consistently worse than that of non-Maori New Zealanders. (Durie, 1987).

By 1900 the Maori population had been devastated and decimated and numbers were reduced from 400,000 to 40,000 (Reid, 1985, p3). Far from fulfilling the expectations of Dr Featherston in the 1860's ("the Maoris are dying out and nothing can save them. Our plain duty is to smooth their dying pillow".) The Maori race did not lie down and die, and 120 years later has become a virile, youthful and adaptable population making up 10% of New Zealand's population (Durie, 1984b).

The Maori people have always taken the initiative in their health affairs and one of the early Maori health movements goes back to 1890 with the formation of the Young Maori Party, the members of which (some being schoolboys) went on a tour of marae throughout New Zealand and took with them a message of health (Durie, 1984b, p7). Some of these young people went on to become doctors and were of great influence in Maoridom. These included Doctors Peter Buck, Maui Pomare and Tutu Wierepa.

In 1907 with the passing of the Tohunga Suppression Act some of the Maori health initiatives from a traditional viewpoint were thwarted. Not only did the Act suppress the perceived negative aspects of the tohunga and Maori culture, more importantly it suppressed the positive spiritual life force (mauri) and esoteric knowledge of the people which had been handed down to them from time immemorial. It negated all the positive traditional beliefs and healing practices of the Maori culture (Barham, 1984, p15).

In 1951 the New Zealand Maori Womens Health League was formed and the organisation has had a positive effect on Maori health.

Durie, (1984b, p15) summarising the history of the health of the Maori people says, "Maori health has been through a number of stages — there was a Stage of Threat to Survival (in which our race nearly died) and then . . . the Stage of Recovery (that saw a threatened race become the most virile race in New Zealand) and that has been followed by the State that we're at now — the Stage where we are rediscovering

positive concepts of health for Maori people. We've rediscovered the Stage of Cultural Assertion".

Maori health has come a long way in the last five years and a common theme seems to be emerging. Many Maori communities are willing to provide for themselves systems which they feel will meet their needs. (Pomare, 1986a, p411).

2. Maori Attitudes To Health

The concept of health from a Maori point of view must be understood and addressed from a holistic perspective. To achieve health requires a sense of spiritual, mental and physical wellbeing which depends on the security of ones self in relation to ones family and community, as well as the knowledge and comfort from ones roots and cultural background (Hui Whakaoranga, 1984, p22).

Te Waiora is a concept that conveys notions of wellness and wellbeing in its widest physical and spiritual sense. A Maori philosophy of health has roots in Te Ao Maori, the Maori Universe, and embodies unity of the mind, body, soul and family.

This philosophy has four cornerstones as follows:

a) Te Taha Wairua: Spiritual Wellbeing

Te Taha Wairua is the immaterial, spiritual soul of a person. It determines ones identity, roots and destination and is present all the time and everywhere. It provides a dynamic link with ones tipua, tipuna, between members of a whanau group and which strengthens the taonga/tikanga values of one's cultural system.

b) Te Taha Hinegaro: Mental Wellbeing

Te Taha Hinegaro is the mental and emotional aspect of a person. Central to the concept of Hinegaro is the principle of Mauri, the vitality spark or life essence of person. It is the principal that determines how one feels about oneself. Confidence and self esteem are important ingredients for good health.

c) Te Taha Whanau: Family Wellbeing

Te Taha Whanau is the extended family system that embraces all whakapapa (genealogical) and present day neighbourhood support ties. It is still the principal social, living and learning unit in Maori society and it is important that it has the resources and skills to provide the sustenance, support and an environment that is needed for good health.

d) Te Taha Tinana: Physical Wellbeing

Te Taha Tinana recognises the physical or bodily aspect of a person. It is the part that Western medicine focuses upon and can't be dealt with separately from the family, spiritual, mental and environmental world of the Maori (Hui Whakaoranga, 1984, p21-22).

The essence of Waiora is contained in the activities and dreams of the whanau (family), hapu (sub-tribe) and iwi (tribe) of the Maori community (Reid, 1985, p4).

Overall the concept of spiritual welfare embraces the vital principal in man, the breath of life, the concern to his total wellbeing and the soul of a person that leaves his body at death (Broughton, 1984, p290).

3. The Cross Cultural Communication Problems Identified By Research

Differences in attitudes between the Maori and the Western models of health give rise to cross cultural communication problems. As Pakehas make up a large majority of HCW's there is a need for an appreciation of culturally related communication problems that may arise in their work related interactions with Maori patients.

Western Health Practitioners seeking to improve the health status of Maori people have tried to do things in Pakeha ways. They have not sought information about or listened to Maori people talk about Maori ways of doing things (Kinlock, 1984, p21). Most health efforts in the past have been concerned with the dissemination of health information from a Western perspective. While Westernisation may have helped to reduce the incidence of infectious diseases, it has not provided a congruent set of values or a culturally relevant framework within which a state of total health (Wairoa) might be realised (Durie, 1984a, p23).

Many Maori people feel that our predominantly monocultural society results in socio-economic, self esteem and health care delivery factors which are likely to be the most important reasons for differences in health status between Maori and non-Maori people. Insensitivity concerning ones language, culture and beliefs or any disrespect towards different health practices may result in a loss of confidence in standard Western therapy and the bad experience may be quickly relayed to others (Pomare, 1986b, p15). The concept of spirituality in healing, a cornerstone of Maori health is not widely accepted in contemporary medicine (Durie, 1984a, p14).

People are recognising that traditional Maori health practitioners and practices are not a thing of the past. We need to ask ourselves what constitutes an equitable relationship between traditional Maori healers and Western Health Practitioners. (Kinlock, 1984, p21).

Maori people wish to have a greater say in decisions affecting their health, there is a disquiet with existing health services. Many Maori communities are willing to provide for themselves systems which they feel will meet their needs (Pomare, 1984, p8).

Problems needing to be redressed are as follows:

1. The lack of cross cultural communication skills held by HCW's.
2. The lack of marae/community based health initiatives.
3. Change of culturally insensitive practices and attitudes prevalent in existing health institutions.
4. The lack of Maori HCW's.
5. Economic problems encountered by Maoris needing health care.
6. The lack of education of HCW's in sensitivity to Maori culture and practices.

Applications and Solutions to Cross Cultural Problems Identified

The following section gives a selection of solutions that could be utilised in minimising or avoiding the problems identified in the previous section.

Facilitation of Cross Cultural Communication

To facilitate cross cultural communication between Maoris and non-Maori HCW's, local Kaumatuas (elders) and tohunga (who are among the most important people in the Maori world) need to be involved. The skill that they have in the art of healing *complements* the skills of the health professional in the science of healing. (Hui Whakaoranga, 1984, p31). Bazley (1985, p5) stressed the need for HCW's to develop a dialogue with Kaumatuas. Elkington (1988), however feels that some of the Kaumatuas are too shy of HCW's and scared of hospitals to be helpful in a faciliative role, and that younger Maori people may need to be utilised.

There is a need for HCW's to use simple language and to avoid medical jargon. Instructions given need to be clear and the use of double negatives avoided. Bilingual resource people should be utilised if language is causing a communication problem (Hui Whakaoranga, 1984, p24).

An attempt should be made by HCW's to correctly pronounce Maori names (Jacogsen, 1985, p8).

Better instructions are needed on how to take medication. Durie (1984b, p10) questions whether Health professionals are the right people to give such instructions. He states, "Maybe our Kaumatua and our Kuia should be involved here."

Daniel (1976) states that in the U.S. the middle class oriented professional and the poor person represent divergent fields of experience and hence communication between them is very difficult. These communication problems are increased even more when two ethnic groups are involved. As Maoris are disproportionately represented in the lower socio-economic bracket in New Zealand (Pomare, 1986b, p13), HCW's need to be aware of this communication discrepancy.

A meaningful relationship between the tribal Kaumatuas and HCW's should help to resolve Maori fears of Western HCW's while at the same time communicating Maori values and sensitivities to Pakeha HCW's.

The Provision of Marae Based (or Community Based) Health Care

The marae remains one of the few institutions where tribal authority is law. On it nutritional habits, safety measures, emotional control, mental stress and recreation can all be modified, and many tribes have introduced deliberate changes to encourage healthier practices. Marae clinics operate in a climate which is compatible with the attitudes and values of the Maori people and both the voluntary and paid staff can be selected by tribal authorities (Maori Health Committee Report, 1987, p6).

Marae health clinics should be run as self help initiatives by the Maori Community using professional HCW's as a resource (Durie, 1984a, p23). The desire to establish marae based centres should be accepted and understood as valid expressions of flexibility and choice (Hui Whakaoranga, 1984, p28). Health promotion depends on the active participation of people able to identify their own health needs and priorities. It doesn't succeed if the enthusiasm rests entirely with HCW's. Marae clinics can be more relaxed and unstructured than hospital clinics. The role of the Whanau and Maori values can be supported and encouraged. Family and marae based health care can include screening and treatment for important diseases that affect Maori people and are amenable to modern medical treatment. e.g. diabetes, heart disease, obesity etc. The Kohanga Reo can be utilised as a base for health education and promotion, and on many maraes this is already being done (Hui Whakaoranga, 1984, p25).

Thornton (1988) states that community based diabetic support groups close to the patients residence are helpful in treating and supporting Maori and Pacific Islander patients.

The Adaptation of Existing Western Health Care Practices

It is necessary for health institutions and clinics to change their practices to accommodate the cultural sensitivities of the Maori people.

Changes required are as follows:

- recognition of the role of the extended family in Maori health.
- allowing patients to bring their families to appointments (Thornton, 1988).
- make the surroundings of clinics etc more informal and allow flexible appointment times (Thomson, 1984, p18).
- actively seek Maori input for health decisions especially in relation to Maori patients.
- use of the tohunga if requested.
- If patients must stay in hospital
  - allow free family visitation.
  - make the stay as short as possible.
  - don't put urine containers, specimen jars etc on food areas.
  - be sensitive to their culture.
  - ask whether dying patients would prefer to die at home with their families.
  - facilitate quick release of dead patients bodies to the family for the tangi.

The Provision of More Maori Health Care Workers

There is a need for more Maori people to be recruited into the health professions. There is also a place for semi-trained people to staff marae and community clinics. This need could be helped by the following:

- information about health care careers should be promulgated on maraes and in schools (Hui Whakaoranga, 1984, p23).
- preferential entry should be given to Maori students into HCW training programmes.
- more recognition should be given to tohungas and other tribal health experts.
- some Maori volunteers should be trained to provide basic health care on the marae and in the communityy. This is being done in Auckland for treating Maori and Pacific Islander diabetics (Thornton, 1988). Maori HCW's have more mana with their own tribes than that given to Western HCW's.

The Need For Socio-Political Changes

This area is a hard one to handle without direct top level political intervention. The majority of Maori people are in the lower socio-economic brackets, 60% compared with 29% for non-Maoris (Pomare, 1986b, p13).

Because of their economic disadvantage many Maori people find the expense of medical care, transport to the doctor, eating of a healthy diet to be beyond their means. Thus there is a need for Government assistance to subsidise the provision of Maori health clinics.

The Provision of Sensitivity Training in Maori Culture for HCW's.

There is a need for non-Maori HCW's to gain a respect and sensitivity for the Maori culture. This could be done by:

- having marae based, government supported courses for HCW's.
- having a strong input on Maori culture by Maori people in all HCW training programmes.
- the informing of HCW's about practices that Maoris find culturally offensive.
- the training of HCW's in cross cultural communication: both verbal and non-verbal.
- the recognition of traditional Maori health practices and of Maori sickness (mate Maori) which may result from makutu (sorcery) or some transgression of tapu and the role of the tohunga who may be needed to deal with any infringements against tapu (Department of Health Circular, 1985).

Recommendations

I would recommend that the solutions suggested in this report be looked at in order of priority given in it. However optimum results would be obtained by implementing solutions in all six areas.

On a local level (i.e. Nelson region) there is a strong desire by the Whakatu marae to set up their own marae based clinic (McKenzie, 1988). This will be done as soon as this new marae is fully operational.

I would recommend (1) that the Nelson Area Health Board continue its excellent liaison with the local Kaumatuas and Maori HCW's to build up a good communication between the Maori people and the local health providers, and to help in the setting up of a health clinic on the Whakatu marae.

(2) that the marae be approached to help teach non-Maori HCW's about the Maori culture in the same way they presently teach Nelson Polytechnic nursing students.

Conclusions

To increase the level of Maori health to that of the non-Maori, New Zealand population requires a two fold approach.

1. Non-Maori HCW's must endeavour to become more

sensitive to the Maori people, their culture and to their attitudes to health.

2. The Maori community must be given the resources to develop their own health initiatives.

The Department of Health through its Maori Health Committee is targeting resources to allow a larger Maori input into health issues and to help in the setting up of marae based clinics and the funding of local ruanangas (tribal councils) (Maori Health Committee Report, 1987). The Maori people have shown their capability and interest in providing their own healthcare and it is imperative that Maori input is actively sought when decisions on Maori health issues need to be made.

In conclusion I would echo the sentiments expressed by Dr R. Barker (1984, p4) in a speech to the Hui Whakaoranga, "The Maori people have clearly demonstrated their capability of providing a valid and legitimate Maori perspective of health. They want to be involved in making decisions that affect their health and wellbeing. Maori people desire self-determination and the ability to maintain control over their own destiny. This presents a challenge to today's health system and requires a commitment to cross-cultural understanding, a change in attitudes and a change in the way things have been done in the past."

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Appendix 1: Glossary of Maori Words and Phrases

Aroha	:	Love, compassion, hospitality in its broadest sense.
Ha A Koro A Kui Ma	:	the dignity of elders (men and women), the breath of life from forebears.
Hapu	:	Subtribe.
Haputanga	:	Subtribal relations or affiliation.
Hongi	:	Pressing of noses.
Hui	:	Formal meeting, gathering, occasion or event.
Iwi	:	Tribe.
Karanga	:	Call or cry of welcome.
Kaumatua	:	Elders.
Koha	:	Gift.
Kohanga Reo	:	Language nests.
Kokiri	:	To advance, progress.
Mana Ake	:	Prestigious, highest esteem, ongoing pride, uniqueness.
Manaakitanga	:	Respect and hospitality.
Marae	:	Formal meeting place, forum for Maori functions, debate and events: Courtyard in front of main meeting house: Physical complex of buildings.
Mauri	:	Vitality spark; life principle.
Mihi : Mihimihi	:	Speech of welcome, greeting.
Oranga Maori	:	Maori health and wellbeing.
Pororopoaki	:	An occasion or speech of farewell.
Powhiri	:	Welcome/invitation.
Runanga	:	Tribal counsel.
Taha Hinengaro	:	Mental aspect and wellbeing.
Taha Tinana	:	Physical aspect and wellbeing.
Taha Whanau	:	Family aspect and wellbeing.
Taha Wairua	:	Spiritual aspect and wellbeing.
Te Taha Maori	:	The Maori persrpective Maori values and belief system.
Tainui	:	Descendants of Tainui canoe; Tainui tribal area.
Tangata Whenua	:	People of the land, original settlers, acknowledgement of the host tribe.
Tohunga	:	An expert and specialist in tribal law, history, customs, rituals, chants, incantation and protocol.
Tohunga Rongoa	:	An expert and specialist in Maori traditional medicines.
Tohunga Karakia	:	An expert and specialist in incantation, rituals and chants.
Tu Tangata	:	Stance of the people, stand tall.
Waiata	:	Song, chant.
Waiora	:	Wellbeing in a holistic sense.
Wairua Tanga	:	Spirituality.
Whanau	:	Families and kin.
Whanaungatanga	:	Family and kin relationships and affiliation.
Whakapapa	:	Geneology; geneological kinship ties.
Whatumanawa	:	Seat of affection; heart.

The Pacific Way

A Study of Rubella Immunity in Pregnant Women in Suva and Nausori Area

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Abstract

Rubella infection of susceptible pregnant women frequently leads to congenital rubella infection (CRI) and effects are devastating. A serological survey was conducted on 115 pregnant women to determine their immune status against rubella. Blood samples collected from them were tested with Virogen Rubella slide agglutination test and haemagglutination inhibition assay. Twenty-two (19%) of the women tested were found negative for rubella antibody. Comparatively Virogen Rubella slide Agglutination test was found to be simpler and more rapid than haemagglutination inhibition test.

Introduction

Rubella is a mild disease in children and adults and clinical complications in them are rare. However, rubella infection to non immune pregnant women, particularly in the first trimester could cause serious damage to the foetus. Maternal rubella is well documented being associated with deafness, blindness, heart diseases, mental retardation and other congenital malformation among infants. Immunisation programme for girls in prepuberty was introduced in Fiji in 1976. Pregnant women are not routinely checked for rubella antibody at ante-natal clinics and serological survey to determine the immune status of susceptible women against rubella, in child bearing age has not been conducted in the past. One hundred and fifteen primagravida were screened for their immune status using haemagglutination inhibition test and latex agglutination test. Results of the serological survey and the comparison of the two tests is presented in this paper.

Material and Method

During October to December 1986, samples of blood were collected from women in their first pregnancy who attended ante-natal clinics at the Anderson Maternity Unit, Colonial War Memorial Hospital, Suva and Nausori Health Centre, Nausori. Samples of sera were kept at 20° Celcius until tested. All women who were screened were also questioned for rubella vaccination and past history of natural infection. All samples of sera were tested with rapid latex agglutination (LA) method using Virogen Rubella Slide Agglutinatioin test available from Wample Laboratories, Division of Carter-Wallace Inc. Haemagglutination inhibition (HI) assay was used as a second test. Antigen for HI test was obtained from Wellcome Diagnostics U.K. Both tests were performed according to package insert of the manufacturer. Enzyme-immuno assay was used as a confirmatory test at the reference laboratory (Department of Microbiology, Fair Field Hospital, Melbourne, Victoria) for those samples of which results were doubtful. Titre below 1:8 for HI, 1:10 for LA test was considered negative for rubella antibody.

Results

Seven samples of blood, out of 122, were excluded from the study because of poor labelling and identification. Twenty-two (19%) sera were negative for rubella antibody. Majority of the rubella negative women (32%) were of Indian ethnic group (Table 1).

Discussions

Rubella, commonly known as German Measles is known to be associated with congenital abnormalities of heart, brain, eyes and ears. This relatively mild disease can cause serious damage to the foetus when the infection is acquired by a pregnant woman, particularly during the first trimester of the pregnancy (1,2,3,4,5). Incidence of defective vision and deafness would increase as the child grows older (1,5).

Health authorities in most countries emphasise vaccination of young girls in the primary and secondary school to induce rubella immunity at the child bearing age, reduce endemic level of rubella and the incidence of congenital rubella syndrome (6). Rubella vaccination was introduced in Fiji in 1976, following major epidemics in the 1960s and early years of the 1970s. Under the current programme rubella vaccination is given to girls aged 9 to 13 years while at primary or secondary school using RA 27/3 vaccine. Thus, immunity against rubella is expected among the vaccinees during the child bearing age.

In this serological survey of 115 women, 22 (19%) were found to be negative for rubella immunity. Average age of the women in this group was about 22 years. Among the two major ethnic groups of Fiji, Indians and Fijians, 82% of rubella negative women were of Indian ethnic group. Information of history of vaccination, past history of natural infection and general knowledge of significance of rubella vaccination, which were collected from each woman suggest that there were about 20 (17%) women who denied ever being vaccinated for rubella. However, they were found to be positive for rubella antibody. The remaining 95 women were uncertain of their immune status. Some of them remembered being vaccinated while at school but were unable to confirm whether the vaccination while at school was for rubella or something else. No one ever retained school health cards on which notes of such vaccinations are normally written and none, had any idea about the significance of rubella vaccination and consequences of rubella infection during pregnancy.

Countries such as Fiji with large rural areas, poor knowledge and education about communicable and infectious disease among the communities, it is likely that some girls could be missed out from being vaccinated. Also there may be a number of girls in the community who may not be attending school for one reason or another and they could be easily missed out since vaccination is provided only

Table 1

Ethnic Group	Positive for Rubella antibody	Negative for Rubella antibody	Total
Indian	51 (74%)	18 (26%)	69 (100%)
Fijian	42 (91%)	4 (9%)	46 (100%)
TOTAL	93 (81%)	22 (19%)	115 (100%)

through the schools. Parents and teachers should be educated to encourage rubella vaccination of girls in prepuberty. Students should also be educated about the importance of their health card and explained to retain after they leave school. A small percentage of vaccinees would fail to acquire immunity despite being vaccinated and would increase the number of susceptible women (7). To monitor the prevalence of sero-positivity of susceptible women, effectiveness of vaccination programme and to determine proportion of susceptible women at risk of contracting rubella infection during pregnancy, priority and consideration should be given to serological surveys of the susceptible groups and a routine test for rubella antibody at the ante-natal clinic (5). Subsequently vaccination of all susceptible children should be emphasised and test rubella antibody should be introduced at antenatal clinics (8).

Wellcome Virus Laboratory at Tamavua Hospital, Tamavua, provides diagnostic serology for viral diseases including rubella. HI has been routinely used as the only serological test for rubella. During recent years battery of serological test for rubella has increased considerably with emphasis on rapid and simple diagnostic methods (4,9). HI test has been increasingly replaced in many countries by ELISA, LA and other tests (10,11,12,13). In this serological survey in comparison to HI, LA was found to be much more simple to perform providing rapid results. HI was found to be comparatively more time consuming (2). Obtaining erythrocytes from 24 hours unfed chicks or pigeons for HI test could be difficult for smaller laboratories with limited resources of transport and animal house. Thus, for the purpose of rapid diagnosis and simplicity test methodology such as LA is more suitable for small laboratories.

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NEW PRODUCTS AND SERVICES

DU PONT TO MARKET TEST FOR HTLV-1 ANTIBODIES

The Du Pont Company will market a test to screen donated blood for antibodies to HTLV-1, a retrovirus that can cause leukemia and neurological disorders.

Du Pont was given FDA approval to market the test, along with Cellular Products, whose test Du Pont also will sell.

HTLV-1, which was discovered in 1978, is a major problem in Japan, where an estimated one million people are infected. To a lesser extent, it also is prevalent among Japanese-Americans in Hawaii. Infection also exists in the Caribbean, Central Africa, and some metropolitan areas of the United States.

HTLV-1 is believed to have an incubation period of 20 to 40 years before the onset of disease. Not all those infected progress to the disease state. Adult T-cell leukemia (ATL), a rare and highly malignant disease, occurs in about 1 percent of those infected.

A second disease, Tropical Spastic Paraparesis (TSP), known as HTLV-1 Associated Myelopathy (HAM) in Japan, also attacks about 1 percent of those infected.

HTLV-1 is spread by the same means as the more virulent retrovirus HIV that causes AIDS. They are by sexual contract, exposure to contaminated blood, contaminated needles, and from infected mothers to nursing babies.

The American Red Cross reports a cross-section of donors in the continental United States has disclosed an infection rate of about .02 percent, or one in every 5,000. In Hawaii, the level is 10 times higher, with an estimated 5,000 to 10,000 people infected.

Du Pont said it would market its own test to high-volume blood centres and the Cellular Products test to smaller-volume centres.

DIABETIC TEST CAN HALT KIDNEY DISEASE

Physicians can now test for microalbuminuria to determine whether a patient with diabetes is at risk of developing kidney disease.

A simple one-minute diagnostic test, which has been been developed for use by physicians, can detect increased levels of albumin in urine within the five to 10 "silent" years of kidney disease before overt symptoms appear.

Preventive action can then be taken that may reverse or slow the progress of the disease that affects half of diabetic patients.

The new test, micro-bumintest, tests for small amounts of the protein albumin in urine. It uses a reagent tablet which is then compared with a colour chart to determine whether an abnormally high level of albumin is present, indicating mircoalbuminuria — the forerunner of proteinuria.

For type II diabetics the test can also help predict if they are at risk of developing other diabetic complications, including heart disease.

Several laboratory methods have been used to test for microalbuminuria, but they have proved expensive and time-consuming, says the Diagnostics Division of Miles Inc USA which has developed the new test. Typically lab specimens must be sent to a reference laboratory which can delay results for several days — "this new test makes monitoring for kidney disease that much easier for physicians and their patients with diabetes".

Leading diabetologist Dr Giancarlo Viberti, of Guy's Hospital in London, recommends patients with type I diabetes should begin testing for microalbuminuira five years after the initial diagnosis of diabetes. It is during this period that symptoms would develop to a point where microalbuminuria could be detected. Testing should be repeated at least annually.

Patients with type II diabetes should begin testing at the initial diagnosis of diabetes, since the length of time they have had the disease is unknown, and should continue at least annually.

Treatment regimes for arresting kidney disease include tight blood sugar control, antihypertensive therapy and modification to the diet to reduce protein intake.

For further information please contact George Bongiovanni, New Zealand Regional Manager, Miles Australia Pty Ltd, Tel (09) 795-540.

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The new illuminator has a working distance of 70mm, at 0.3 numerical aperture; and its housing is flip-top designed for quick and easy access to the bulb ifit needs replacing.

For more information contact: Carl Zeiss Pty Ltd, 114 Pyrmont Bridge Road, Camperdown, NSW 2050.

NEW APPOINTMENTS

Miles Australia Pty Ltd, New Zealand regional office, have appointed Mr Bob Roy as their territory manager for the South Island, based in Christchurch.

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- **BD PRIMARY CARE DIVISION** manufactures a variety of rapid diagnostic instruments, as well as general laboratory supplies.
- In addition, **BD MEDICAL DIVISION** are amongst the world's largest suppliers of syringes and needles, diabetic aids and bandages, amongst other products.

Easy to use.

Reflotron®

The innovative* STAT lab analyzer

New horizons in clinical chemistry and diagnosis are opened up by the Reflotron bench-top Analyser. In just 2-3 minutes parameters can be measured directly from 32ul of whole blood — EDTA, Heparin or Capillary.

Reflotron's entirely automatic operation coupled with its speed and the complete absence of any hazardous sample preparation makes it ideal for use in a STAT laboratory, with extremely bio-hazardous samples, isolation laboratories, or whereever results are needed on the spot.

***Innovative:**
awarded the 1985 German industrial prize for innovation

Current Parameters
Glucose, Urea, Y-GT, Haemoglobin, Cholesterol, Triglycerides, AST, ALT, Uric Acid, Bilirubin, Amylase

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