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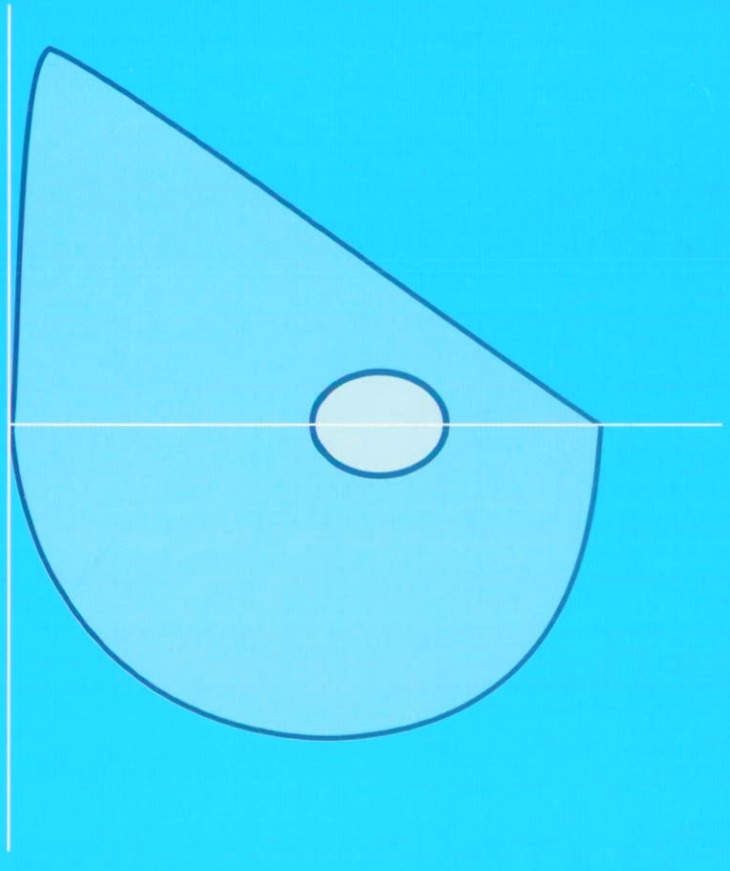
Inspire



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The Official Journal of the Association for Respiratory Technology & Physiology

Inspire

The Official Journal of The Association for Respiratory Technology and Physiology

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ALL CORRESPONDENCE TO

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BURSARY INFORMATION

Bursaries are available to ARTP members, which can be used to support attendance at National ARTP, BTS or STS meetings. Other relevant respiratory meetings or approved training courses will also be considered. Bursaries are available to student, associate and full ARTP members of any grade. They can be used for partial or total funding of registration, travel and accommodation costs for the whole or part of the meeting/course. All bursaries are considered by the ARTP Executive Committee on the reason for the request and the commitment to an article for Inspire.

For further details or an application form please contact: **Gill Butcher (Bursary Secretary), Cardiorespiratory Unit, Queen's Hospital Burton, Belvedere Road, Burton on Trent, DE13 0RB. Tel: 01283 566333 Ext 5334 or via e-mail: bursary@artp.org.uk**

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E-MAIL FORUM: forum@artp.org.uk

CORRESPONDENCE: admin@artp.org.uk

MESSAGE FROM THE ARTP CHAIRMAN

To: The Editor of "Respiratory Therapist International" U.S.A

From: Dr Brendan G Cooper Chairman of the Association for Respiratory Technology and Physiology (representing over 1200 lung function staff in the U.K.)

Message of Condolence to all US Respiratory Staff

I write on behalf of all your colleagues who work in lung function measurement in the U.K., to offer our condolences, sympathy and support for our U.S. colleagues caught up in the atrocities in New York and Washington. As I write this, staff and patients in our waiting rooms in the U.K. stare in the same disbelief as you at television pictures from New York.

We appreciate that individuals, families and friends of respiratory staff will inevitably be suffering from this dreadful act of terror. We would like you to pass on our feelings of shock and horror but also of support, solidarity and caring.

We will carry on today working for humanity and show that as humans we can counteract the evil of yesterday with the many, many, good and caring people that make this world a good place to be in. We cannot change the world in big and dramatic ways, but we can stand up and be counted as believing in what is right and good. Many of us have colleagues, who we know professionally, based in New York and Washington, and we think of them and their families at this time.

Do not despair. Each day we measure the breath of life and we appreciate its value and importance for each individual. Cease the day and remember you are not alone in your grief.

With all our best wishes, caring and sympathy.

FIRST WORD

Firstly, on behalf of all ARTP members, I would like to say "Thank You" to our Chairman, Brendan, who on Wednesday 12th September sent a message of sympathy via e-mail to our American colleagues. I'm sure that he has expressed the profound feelings of us all.

Welcome to the Autumn "New Look" *Inspire*. Hopefully members will like the new design and colour scheme and, at the very least, the thicker glossy cover will stop the coffee rings on your desks. Coffee breaks!!! Who gets time for them these days?

Preparations for the ARTP Winter Conference in Blackpool are now well underway with another stimulating and entertaining programme planned. If you are having problems securing funding ARTP bursaries are still available or, if you are feeling brave, why not have a go at submitting an abstract for poster presentation. Be assured you will have the admiration and support of many colleagues not so brave and it may spur you on to further heights.

Inspire has previously included regular and not so regular features, some of which have disappeared for various reasons including my usual plea of "pressures of work".

After reviewing journals from some of the other areas of Clinical Physiology, there are a few topics that would be great to see as regular features in *Inspire*:

- Book Reviews
- Health and Safety issues
- Department profiles

In addition there are a couple of previous regular features that are in danger of extinction due to those same "pressures of work".

- Forum Digest – continuing Keith Butterfield's sterling work at communicating all the problems, ideas and issues raised on the ARTP e-mail forum.
- Medical Journal review – to re-establish Sue Revill's valuable feature and give members an overview on relevant recent research

Any volunteers to cover these or other respiratory related issues, two to three times a year would be greatly welcomed. Anybody feeling a literary "urge" please contact me. Also please keep on sending your correspondence and articles.

Gill Butcher, Cardiorespiratory Unit, Queen's Hospital Burton, Belvedere Road, Burton on Trent, Staffs DE13 0RB
e-mail: inspire@artp.org.uk

CONTENTS

VOLUNTARY REGISTRATION – UPDATE

There are currently 36 people registered in Respiratory Physiology on the RCCP Voluntary Register. With over 500 ARTP members and many non-members working in the field this number is still low and members are encouraged to submit their forms to: **Administrator, RCCP, 202 Maney Hill Road, Sutton Coldfield, West Midlands, B72 1JX**

Many "frequently asked questions" were addressed in the December 2000 issue of *'Inspire'* but if you need any advice or information on the registration process please contact the representative of Respiratory Physiology on the Clinical Physiology Group: **Dr Sue Hill, Consultant Clinical Scientist, Department of Respiratory Medicine, Lung Investigation Unit, 1st Floor Nuffield House, Queen Elizabeth Hospital, Birmingham Tel: 0121 697 8339**

Correspondence:

Dear Editor

I have just completed a Respiratory Course for Hospital Nurses run by the National Asthma and Respiratory Training Centre. Although I am a technician in Cardiorespiratory Medicine, I found this a very well run course. It was a distance-learning course, presented in a manual format and I found it was put together extremely well and covered a wide range of respiratory conditions. If anyone was looking to improve their academic qualifications then it is worth looking at, as are other courses being offered by the NARTC.

Best Wishes

Christine Gilliland

Dr B Buick (Senior Clinical Scientist in Respiratory Medicine) at Belfast City Hospital wrote to amend the statement in May's edition of Inspire in "News from the Scottish Forum". The text should have stated "the Scottish Forum has also recently been approached by technicians from ***Northern*** *Ireland". As Dr Buick points out the technicians in the Republic of Ireland already have a very active group in the ARTI whereas there are only 3 ARTP members in Northern Ireland and their close proximity to Scotland makes a link for meetings logical.*

Apologies ... Ed.

DATES FOR YOUR DIARY

ARTP WINTER CONFERENCE
17th to 19th January 2002 Hilton Hotel Blackpool

For the provisional programme and application form please contact:
Jackie Hutchinson ARTP Administrator, 202 Maney Hill Road, Sutton Coldfield, Birmingham B72 1JX

SHORT COURSES IN ADVANCED RESPIRATORY PHYSIOLOGY
Coventry University

September 17th to 21st 2001 (Part 1) Anatomy, histology and physiology of the respiratory system, physiology of ventilation and gas exchange, methods of measuring lung volumes, airways resistance and gas transfer, simple spirometry, blood gas measurement, flow-volume loops, methods for determining respiratory muscle function, allergy, bronchial challenge and skin testing

February or March 2002 (Part 2) Dates to be decided. Control of respiration, respiratory response to exercise, measurement of exercise response, physiology and methods of assessing ventilatory control, measurement of ventilatory response, field walking tests, inhalation therapy, ventilatory and physiological changes during sleep, changes in exercise response with disease.

Cost of each week is £300 exclusive of accommodation and subsistence. For further details or application form contact: **Anna Kovalchuk, Coventry University, School of Science and the Environment, Biosciences, Priory Street, Coventry CV1 5FB**
Tel: 024 76 888678 e-mail: A.Kovalchuk@coventry.ac.uk

ARTP SHORT COURSES
Assessment of Breathing Disorders in the District General Hospital
Sleep Unit – Dept of Respiratory Medicine Bristol General Hospital
8th/9th November 2001 or 22nd/23rd November 2001 (Two day course)

Registration Fees: ARTP Full Member £145 ARTP Student Member £130
ARTP Non-Member £170

Subjects covered: basic sleep physiology, pathophysiology of OSA, methods for basic screening and assessing patients with suspected OSA, interpretation of screening tests for suspected OSA, treatment for OSA-CPAP, issues related to driving and OSA and other medical issues.

An advanced sleep course, covering full polysomnography, is planned for early 2002 at Bristol.

For course information and application form contact: Jackie Hutchinson, ARTP Administrator, 202 Maney Hill Road, Sutton Coldfield, B72 1JX
Tel: 0121 241 1611 Fax: 0121 354 8326 e-mail: admin@artp.org.uk

COPD 3
12th to 14th June 2002 International Convention Centre Birmingham

Reduced fee for technologists and junior scientists £300 excluding accommodation

For registration details contact: **COPD3 Event Managers, Maritz Travel, Bath Brewery, Toll Bridge Road, Bath BA1 7DE**
Tel: 01225 858577 e-mail:cvl@cvltd.co.uk

"ON THE BLOWER" - Manufacturers' News

by Brendan Cooper, Nigel Clayton and Alan Moore

1. Manufacturers' Liaison

Well, here we are in one of the best summers for years - England losing the Ashes successfully, the General Election over and no change in policy on State Registration for MTOs, Charles and Camilla snogging on National TV, Jeffrey Archer locked up for perjury and the railways back to their usual delays, closely followed by the airlines. Amidst all this chaos and depravity, what's been happening in the world of lung function equipment?

2. Trade Stand

Lung function equipment

Blood Gas machines

I have had a demonstration of the latest **IL** blood gas machine, the Gem Premier 3000 which is based on a Mallinkrodt device. This semi-portable (well it couldn't be carried for long without a trolley at 18kg!!!) machine is maintenance free, cylinder free and has a colour touch screen. The software is simple to use and the reagents, calibration and waste are incorporated into a disposable cartridge about the size of three video cassettes taped together. The machine itself is relatively cheap, since like most healthcare organisations the profits are in the consumables. The cartridges have a fixed shelf life so ordering the correct size is critical to make the system cost effective.

Spirometers

Ferraris Medical are pushing their range of spirometers including KoKo spirometers run through a PC which can be desk based or semi-portable with a Notebook. We have been evaluating them recently along with a couple of other centres in the UK. The data will be available at the BTS and the ARTP Winter Conferences.

Ferraris/Morgan

No doubt members will have seen the advertisement for the "portable lab" staff advertised by Ferraris/Morgan. These portable labs are going to be used by HealthCall for testing miners at a variety of locations around the UK. Incidentally, the vehicles in question were fully equipped Winnebago Recreation Vehicles (RV) worth around £100K each. They have been completely stripped out and re-kitted as mobile labs. Nice idea, but applicants should know that these vehicles are left hand drive 30 foot long monstrosities and need to be parked with the aid of the built in TV/Camera system for reversing. (No sexist jokes about reversing please!!)

When these portable labs have served their purpose, we wonder whether Ferraris/Morgan are going to convert them back to their original specification and give one to Kevin Hogben to replace the ageing Mitsubishi Space Wagon that has clocked up more miles than a NASA space shuttle? Is this another case of Morgan equipment having a large RV???

Nasal assisted ventilation (CPAP, NIPPV, BiLevel, etc)

The **Medivent** RTX Respirator (based on the Hayek oscillator) is currently being marketed to hospitals throughout the UK. As a negative pressure ventilator it is not a bad first option, and removes the need for a nasal mask. See their website at www.medivent.com or Tel: 020 8203 3962.

Tyco, the parent company for Mallinkrodt, Nellcor, Puritan-Bennett, etc. have moved all their Customer Service centres for medical products to a single site in Gosport Hampshire. Their customer service centre is now on 01329 224226 or Fax: 01329 224334. **Glaxo Smith Kline** have also provided a single Customer Contact Centre on a freefone number: Tel: 0800 221441. You see all the big companies have followed the ARTP lead to have a single point of contact - Jackie Hutchinson of course!

Contrary to popular rumour, **Deva Medical**, Tel: 01928 565836 (excellent supporters of ARTP) are still agents for Breas ventilators and intend to remain so for the forseeable future. **Breas Medical** (Tel: 01252 731660) are also selling ventilators directly so it is worth shopping around for the best deal. The Breas range now includes the PV10 CPAP machine, the PV403 ventilator which is an upgrade of the PV401. The PV403 offers pressure control, pressure support, volume control and SIM ventilation modes for the same price as the PV401. Together with the down-loadable data from the software they offer an ideal solution for acute assisted ventilation.

I have also had a demonstration of the BioMS Airox Home2 volumetric ventilator that will be distributed in the UK by **Nuwyn**. It has very adaptable software and has alarms and electronic watchdogs, but it is a heavy ventilator. I could see it more being used on a ward than at home. OK so it is French - but come on, you drink their wine and eat their cheese - give it a trial at least!

Fisher & Paykel Healthcare are promoting their Aclaim mask which sells at £70-£80 each depending on number purchased. The mask has a nasal cushion, a bias flow to reduce draughts to the bed partner, and a "gliding mechanism" to allow movement when "turning over" in bed. The masks come with easy to follow cleaning instructions. They also sell mask kits, which include all new "soft bits" at £24.50. In other words a year's worth of masks (i.e. 2 per 6 months) could cost £94 as opposed to over £100 for Respironics masks. This is comparable with Resmed masks. Their HC201 combined CPAP and humidifier which retails at £325 (or less depending on numbers) for CPAP machine, humidification chambers, tubing, filter and bag. That's quite a good deal for a quiet CPAP machine with heated humidification!

Resmed Mirage Full Face NIPPV Masks - Use in Critical Care

We have heard of a number of instances whereby the mask swivel connector has been pulled apart by confused patients resulting in

the patient's SpO2 nose-diving. The difficult thing with this particular swivel connector and valve assembly is that it is very difficult to assemble hastily so as to get a critically ill patient back to a stable condition. Resmed have supposedly modified the construction of the swivel but this appears to have made little or no difference in practice. We therefore advise extreme caution in using this mask in a critical care setting and would ask others to report back on any problems they may have experienced.

Also we note that Resmed offer the same HC100 Starter Kit as Fisher & Paykel but they cost 50 % more than F&P. We thought it would be useful for members to know this!

Devilbiss/Sunrise Serenity Masks
If anyone has experienced problems with the plastic lugs that hold the rubber forehead pads onto the mask breaking, then they should report the matter back to Sunrise. There has been a manufacturing problem and, to their credit, Sunrise have been very good in replacing the defective masks. Please also let us know so that we have a better appreciation of the scale of the problem.

Final Note: The World Trade Tower Atrocity aside from the human and political cost, will undoubtedly have some knock on effect on world markets and we don't know what implications that will have on manufacturers of respiratory services. Because of globalisation, attacking the one will affect us all. It's a small world after all!!

3. Complaints Database and WatchDog.

When writing to the Complaints Database and WatchDog, please state (i) exact dates, (ii) names of people you dealt with and (iii) state clearly your grievance. Also, give a summary account of the history of your complaint (a maximum of one page of A4). There is no need to send photocopies of correspondence at this stage.

Dr Brendan Cooper, (Honorary Chairman) Lung Function Department, Nottingham City Hospital, Nottingham NG5 1PB.
DDI/FAX (24 hours): 0115 840 2615
Email: chairman@artp.org.uk

ASSOCIATION NEWS

DECLARATION OF INTEREST

In accordance with the ARTP Constitution (April 1999) point 14.0, the ARTP Executive Committee members must declare Interests.

The following Executive members hereby state that they have obtained Interests, which are declarable, during the financial year April 1st 2000 to April 1st 2001:

Dr Brendan Cooper
Mrs Angela Evans
Mrs Pat Mitchell
Dr Adrian Kendrick
Ms Melanie Marshall
Mr Nigel Clayton
Dr Sue Hill
Mr Steve Scholey

Interests that are declarable are for payments of over £100 in any financial year from:

- Commercial companies for professional services i.e. teaching
- Sponsorship, gifts, ex-gratia payments
- Consultancy agreements with outside organisations

Specific details of Declarations of Interests for specific Executive members can, if necessary, be obtained by writing to Jane Caldwell, Honorary Secretary ARTP, Cardiorespiratory Dept, Rotherham Hospitals NHS Trust, Moorgate Road, Rotherham S60 2UD stating what is required and the purpose of the request.

ARTP AWARD FOR SERVICE TO RESPIRATORY MEASUREMENT

The aim of this award is to recognise the achievements of individuals in promoting or advancing the ideals and standards in respiratory physiology and measurement and practice.

Nominations should be in writing and sent to Jackie Hutchinson, ARTP Administrator, for approval by the Executive Committee before 1st October 2001.

Nominations should include the reasons why this person has been nominated and be supported by at least two other ARTP members from outside the nominators department.

Two awards will be presented at the AGM; one to either a medic or a technician/scientist, and the other to a technician/scientist.

No member currently sitting on the ARTP Executive can be nominated for the award.

Jackie Hutchinson, ARTP Administrator, 202 Maney Hill Road, Sutton Coldfield, B72 1JX

ARTP BURSARIES

ARTP CONFERENCE 17TH TO 19TH JANUARY 2002 BLACKPOOL

Funding has been made available for four bursaries of £200 each to assist ARTP members with registration fees to attend the ARTP Conference in January 2002.

The commitment to an article for *Inspire* either before or after the event is the only requirement for application. Articles may be a piece of scientific research, case study, department protocol, course project, equipment/test evaluation, meeting/course evaluation or similar, of the applicant's choosing.

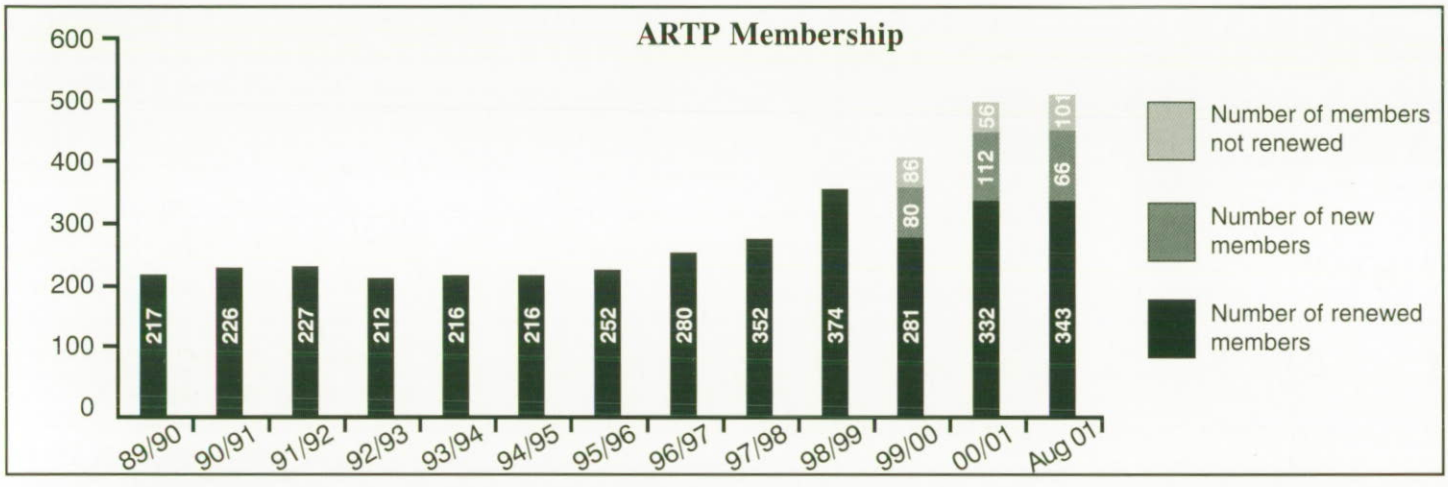
For further details or an application form please contact:
Gill Butcher, Cardiorespiratory Unit, Queen's Hospital Burton, Belvedere Road, Burton on Trent,
Staffs DE13 0RB
Tel: 01283 566333 Ext 5334 or e-mail: bursary@artp.org.uk

MEMBERSHIP REPORT – SEPTEMBER 2001
S. SCHOLEY

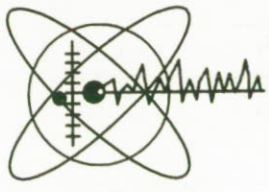
We are now 5 months into the membership year and have 101 members that have not, as yet, renewed their membership. So come on, get your fingers out, and return those renewal forms. If you have misplaced it please contact the ARTP administrator Jackie Hutchinson on 0121 241 1611 and I am sure a new form will be sent to you.

The good news however is the ARTP has 66 new members, perhaps something to do with the move towards state registration, or the word is out about the winter meetings. Membership now stands at 510.

I look forward to meeting the majority, hopefully all, of you at the forthcoming meeting in Blackpool.



West Midlands Physiological Measurement Technologists Group



RESPIRATORY MANAGERS GROUP
Transfer Factor Audit

Dear Colleague,

At the last Respiratory Manager's meeting it was suggested that departments may wish to take part in a simple audit of TLCO variability and that I would provide an outline procedure for departments to follow. Please try to collect as many tests, on as many subjects, as you find practical. I have kept it very simple in order that departments will be able to collect a large number of data points.

The purpose of the audit is not to identify errors in technique but to gain a greater insight into TLCO variability, which is not well documented in the literature.

Procedure

1 Subjects should have no known respiratory conditions, which may introduce variability into the readings. (Any unusual symptoms e.g. URTI should be noted on the form for the days symptoms persists)

2 Measurements should be made at regular intervals (ideally 1 or 2 times each working day), at a similar time, using the same piece of equipment, applying the department's standard technique. It is important that the subjects' physiological status remains the same therefore meals and exercise should be the same. Any alterations to standard procedures should be noted on the form. Female subjects should record the first day of their period on the form.

3 All information supplied will be kept in strictest confidence and a unique subject identifier will be assigned to each form prior to analysis.

4 Data should be collected for at least 1 month for each subject. Please complete the form overleaf. All values should be recorded to 2 decimal places.

Completed forms should be returned to:
Trefor Watts, Clinical Measurement Unit
Walsall Manor Hospital, Moat Road
Walsall, WS2 9PS
Phone 01922 656583 Fax 01922 656204

Please forward data to me by the 30th November 2001 in order that I can report back to the next winter ARTP Meeting.

Name of Subject ..... Subject Number .....

Hospital ..... Contact Phone Number.....

Height ..... Age ..... Sex .....

Equipment details .....

Date	Time	TLCO	V_A	Comments

Please return form to Trefor Watts, CMU, Manor Hospital, Moat Road, Walsall WS2 9PS **by 30th November 2001.** Thank you for your support.

ARTP Staffing Report 2001

Dr. Brendan Cooper

Introduction

The National press have recently been highlighting the staffing dilemma for MLSOs in the NHS. Senior ARTP members have been aware for many years of the lack of "spare capacity" when recruiting for new staff. This situation was made worse when the Department for Trade and Industry awarded the MAP to Healthcall who promptly poached MTOs from many lung function departments in NHS Trusts. The irony of this is (so the rumour goes) that it was decided at a very high level in government not to award the tender to any NHS bid "because it would damage the already depleted lung function services provided".

Currently the DOH/NHSE is surveying all NHS Trusts to establish the problems of staffing in all professions with a view to drawing up the Human Resource strategy of training and development for the Service. A survey was also undertaken by MSF Union last November, but the results are not out yet.

In a bid to address the specific difficulties for retention and recruitment in lung function the ARTP e-mail forum was used to canvas members about their perception of this problem. Furthermore, the ARTP Administrator chased up all adverts placed since last summer, to see what posts were filled, which were still vacant and how departments had got around the problems.

Table 1

	Advertised	Filled	%	Previous advert	%
MTO2	7	5	**71%**	0	**0**
MTO2/3	4	1	**25%**	2	**50%**
MTO3	21	5	**24%**	7	**33%**
MTO4	4	4	**100%**	1	**25%**
TOTAL	36	15	**42%**	10	**28%**

Discussion

The overall picture (Table 1) is as suspected, dismal. Only 42% of posts are filled. The most difficult posts to fill are MTO3 posts (24%), although advertising for an MTO2/3 posts fair no better. It is not surprising that the rate of pay (37 hour week) for a technician at Healthcall would fall around the MTO3 level. Advertising for Chief technician posts is good as all posts were filled, whereas MTO2 posts aren't always filled. The level of re-advertising indicates that about a third of all jobs are difficult to fill.

These results do not tell the full picture. Several members sent e-mails via the Forum and cast light on a number of trends and strategies used to solve the recruitment problem. These included the following:

- Appointing trainees on regional training schemes
- Upgrading MTO2 in post to MTO3 and advertise for ATOs to fill the service gap.
- Appointing B.Sc. graduates as trainees, then upgrade them to MTO1 after 6 months satisfactory progress, and up to MTO2 when their BTS/ARTP National Assessment was complete.
- Appointing B.Sc. graduates straight on to MTO3 grade!
- In London it is nearly impossible to appoint an MTO2 because of the cost of living.

Other points which were raised were as follows:

Advertising via ARTP was successful in 13 cases, compared to 2 successful appointments in New Scientist (1 MTO4, 1 MTO2). ATO posts are apparently better advertised in local newspapers.

The key feature of many of the e-mails is that starting salary and salary structure is the key problem for recruitment and retention. Subsequently, many Trusts either employ unqualified individuals or else adhere too rigidly to the outdated and not useful Whitely Council rules. With the advent of Investors in People and the new NHS "Improving Working Lives" initiatives the long to medium term looks less bleak. So what recommendations can we make to improve the recruitment and retention of lung function staff?

ARTP would strongly recommend the following actions:

- The completion of the State Registration process for MTOs in Clinical Physiology as soon as possible.
- The establishment of a National Standards Framework for respiratory disease.
- Support from BTS colleagues when requesting upgrades and higher grade appointments especially MTO3.
- Support from Trusts for appointing new technician posts when new consultants are appointed.
- Personnel departments to be aware of the ARTP Website www.artp.org.uk and the current guidelines for grading.
- Encourage heads of departments to advertise via the ARTP.
- Improvement of salary scales for all MTO grades.
- The publishing of the MSF and DOH/NHSE surveys as soon as possible.
- Discourage Trusts from employing staff without suitable qualifications and training in lung function.

Acknowledgements

Thanks to the following for contributing comments and information for this report; Judith Waterhouse (Sheffield), Sue Hill (Birmingham), Angela Evans (Stoke), Linda Sturman (Manchester), Laura Watson (Nottingham), Molly Dasalou (London), Keith Butterfield (Dudley), Jackie Hutchinson (ARTP Administrator).

ARTP Manufacturers' Liaison

Report by Nigel Clayton

Following on from our initial meeting in December 2000 with the "BIG FIVE" lung function manufacturers, the ARTP Manufacturers' Liaison Group met with the manufacturers once again to further our discussions regarding lung function reference values, quality control software, quality of service and access to equations used to calculate lung function parameters.

Brendan Cooper, Alan Moore and myself met with Beaver Medical (suppliers of Med Graphics), Jaeger, Morgan Medical and SensorMedics.

Apologies were received from Pulmolink (suppliers of Medi-soft)

Matters arising from the meeting held in December 2000

Reference values

Morgan Medical stated that they had not yet produced a disk with the latest revision of reference values. (Remember they said it would be available at the end of February 2000?). They will now be available on request from August 1st 2001. Alternatively, they may be downloaded from the Morgan web site after this date, although they were not on the web site at the time of writing this article.

Discussion followed regarding reference values and it was agreed that we should all be using ECSC values for ages >20 yrs and Rosenthal for ages <20 yrs. All the manufacturers present stated that they have access to the Rosenthal predicted equations. If you do not have these equations on your system, please contact your equipment supplier.

Beaver stated that they are unable to amend their reference sets at present due to software problems. They have run test data supplied by Alan Moore and will fax the results to him. Jaeger have been unable to determine the source of error with the female predicted values. Work is ongoing to resolve the problem.

Brendan will forward the BTS/ARTP generic report to the manufacturers for inclusion in future software releases. This will enable all users throughout the country to use the same report format.

Quality control programmes

Jaeger stated that they supply JQM software, which allows the simulation of patient data to verify that system calibrations are correct.

SensorMedics have not yet produced a calibration report for inclusion in their report sets, although it is possible to format your own report.

Morgan Medical stated that they have a quality control programme available for their MDAS systems.

Beaver Medical reported that the Med Graphics system has a report available to log quality control data.

Service agreements

Nigel reminded the manufacturers of the ARTP wishes regarding service calls. These are:

- Manufacturers to log all service calls.

- Supply the customer with a job reference number.

- A service engineer response to the call within two hours.

- A service engineer on site within 24 hours if necessary.

Peter Shepherd (Jaeger/SensorMedics) stated that service calls are often received from Medical Physics departments who maintain lung function equipment. Delays between equipment failure and engineer response in these circumstances are often due to a slow response from the Medical Physics department and not the manufacturers. Nigel Clayton stated that the manufacturers should still be able to offer a call logging service regardless of who makes the service call.

Morgan Medical, SensorMedics and Jaeger stated that they offer a remote diagnostic service for lung function equipment via a modem.

If your computer service department will allow remote access to your lung function computer equipment it might be well worth considering this service option as it could save down time and money.

Software upgrades

The manufacturers stated that they were happy to supply "bug fixing" software free of charge. Any software that improves the functionality of a system would normally be charged for, or made available through service contracts.

Formulae and calculations used to calculate BTPS corrections, dead space, non-ventilated mass, TlCO etc..

Alan requested the manufacturers to make available all equations used in their software to calculate derived lung function parameters. These are particularly useful for training purposes and for students sitting the ARTP National Assessment. (As all owners of black box technology know, it should be possible to calculate such things as TlCO from first principle.)

Morgan Medical stated that they make this data freely available.

Jaeger, SensorMedics and Med Graphics will make this data available upon request.

And finally

If you encounter problems with any of the manufacturers or their equipment and you feel that they have not resolved the problem in a satisfactory way, please call me:
0161 291 2406 or
e-mail me at nigel.clayton@smuht.nwest.nhs.uk

E-MAIL FORUM DIGEST

There were 177 members on the Forum at the beginning of August (well a few less actually as some members have registered two addresses). In July there were 77 messages posted on the Forum

For the benefit of those members who do not yet have access to the E-mail Forum here is a synopsis of some of the messages and discussions that have been 'posted' between November 2000 and June 2001...

'Making the Change - A Strategy for the Professions in Healthcare Science' is a Dept. of Health Document issued in February 2001. The Contents and Foreword are reproduced on our website (see News - National Issues). The full report (in PDF format) is available at **http://www.doh.gov.uk/makingthechange/index.htm** Sue Hill had a major input into the writing of the document.

Cathy Hammond (Whittington Hospital, London) asked what tests to perform on clients referred by solicitors for assessing their claim that they are unfit/unable to provide sufficient breath samples for **breathalyser tests**. Responses came from several members with experience of the subject. Most rely on simple spirometry and Brendan Cooper (Nottingham City) added that if the subject was claiming an acute asthmatic attack prevented them from providing the sample then a medical report, which would probably include serial peak-flow measurements, a bronchial challenge and reversibility testing could also be required. Keith Butterfield (Dudley) reported a study on one make of desktop breathalysers which showed that it required 12 l/min to trigger and 1.2 litres of sample volume, subjects with an FEV1 of <1.0 litre were unlikely to be able to trigger that particular device.

Brendan Cooper (Nottingham) & Sue Hill (Birmingham) posted information on the Forum to help with completing **Voluntary Registration** forms. Any information distributed in this way is also published on the Website (see News - National Issues) so if you do not subscribe to the Forum keep an eye on the website for the latest information.

Jacki O'Neill (Yorkhill, Scotland) thanked ARTP members working in paediatrics who filled in her questionnaire last year. This was part of a benchmarking exercise to support her claim for an **upgrade** from MTO3 to MTO4, which has been successful.

There was a discussion on **Fitness to fly** assessments both the nitrogen entrainment and plethysmograph techniques. Barbara Oatway (Falkirk) enquired how a normal person's saturation will respond during a flight or more specifically during a hypoxic challenge test. Though not the subject of a proper study Adrian Kendrick (Bristol) anecdotally reported that he (as a 'normal' subject; which is a matter of opinion!) desaturates by 3-4% during both flight & hypoxic challenge. Andy Robson (Edinburgh) tells us that some airlines will not allow the use of an "open face" mask and will only allow the use of supplemental O2 when the plane has reached cruising height, due to the "danger of explosion".

Surfing the Medical Devices Agency website (**http://www.medical-devices.gov.uk**) Warren Mitchell found Safety Notice MDA SN2001(08), **Tissue Necrosis Caused by Pulse Oximeter Probes**. Though little information was given in the safety bulletin it apparently related to taping on probes too tightly, which caused tissue necrosis due to the pressure, which unfortunately resemble burns.

We are beginning to get our ideas and plans together for our National QC Scheme. Brendan managed to recruit further contacts in the North East and Wales (who already have their own regional group). We now have contacts in most of the UK but those contacts will need some support to get the scheme up and running so if you are interested contact Brendan or Keith.

Geraldine O'Connell-Ramsay (Bath) asked advice on purchasing a **bed for a Sleep Lab**. Risk Assessment weren't happy as the room isn't very big - should an 'incident' occur. Members use a mixture of divan-type and hospital beds. With regard to Crash Team incidents, several members reassured that, in their experience, there is no more risk of a sleep patient having a heart attack during the investigation than in the normal population.

Keith Butterfield (Dudley) conducted a straw poll on **nebuliser servicing** - 11 of the 13 depts. responding have their nebulisers serviced annually, 2 more frequently. Most have their servicing handled by their EBME dept. while 2 handle it themselves and 1 uses an external agency.

Brendan consulted the Forum when he was asked by a colleague to recommend a **minute volume measuring** system for monitoring patients breathing various oxygen concentrations. The pros & cons of systems from a bag-in-box through Validyne pressure transducer amplifiers and flow heads, Wrights respirometer (mechanical), Magtrak (a digital respirometer) to mass flow sensors were discussed.

Nigel Clayton (Wythenshawe/ARTP Manufacturers liaison) received a **plea from a Nigerian hospital** looking for some lung function equipment to donate to them. If you know of any such equipment gathering dust in the corner of your laboratory (or factory if you are a manufacturer), please send the details to Nigel.

Brian Buick (Belfast) asked about the consensus view on what **resuscitation equipment** should be available during cardiopulmonary exercise testing. A brief summary is that 12 lead ECG ought to be used and full CPR equipment available and technician trained in Advanced Life Support. Sue Revill (Leicester) pointed out that as her local Sainsbury's and Nottingham's Victoria Centre have defibrillators available for use by (trained!) security guards

then a defib located permanently in an Exercise Lab is not an unreasonable request! Sue also had something to say about the *'combined cardio-respiratory test'* request and how it is unsuitable as a tool for providing a 'differential diagnosis'.

Adrian Kendrick polled the Forum for an estimation of the use of **capillary blood gases** prior to his presentation on blood gases at the Summer BTS meeting in Bournemouth. Several laboratories responded and it is apparent that there is wide variation in practice throughout the country – from a few per month to hundreds! There is also a camp that doesn't trust the capillary method and prefers the 'gold standard' arterial puncture. Studies have cast doubt on CBG's correlation to arterial sampling especially at higher PO_2 values and there was agreement that CBGs were not useful when patients are breathing hyperoxic mixtures.

The discussion on arterial sampling prompted Tess Compton-Price to question our liability when performing the task as her Trust expected her to take out her own **Personal Liability Insurance**. Sophie Goldthorpe (Wythenshawe) has taken legal advice on a similar issue working on a clinical trials unit and found that even documented training and assessments to prove competence isn't 100% watertight.

Martyn Bucknall (Bromley) was interested to know where labs obtain their **methacholine or histamine solutions**. Though, no doubt, there are other suppliers; Forum users named suppliers of histamine as the Pharmacy Depts at Northwick Park and Ninewells Hospital, Dundee. Methacholine is available from **http://www.methapharm.com** and Nova Laboratories Ltd and both can be purchased from Stockport Pharmaceuticals. (Contact details can be found via the Forum archives at **http://groups.yahoo.com/group/artp-forum**).

If you want to join in the discussions on the Forum and get the latest news and information from the ARTP just follow the instructions on the website to subscribe.

The website is regularly updated with the latest information, news, courses and meetings. Also the latest updates to help you fill out your Voluntary Registration Forms are published on the Forum and the website (under 'National Issues' in the 'News' section. The 'Latest Updates' panel on the home page of the website tells you the last 5 updates at a glance.

Keith Butterfield (e-mail: **webmaster@artp.org.uk**)
ARTP Website – **http://www.artp.org.uk**
Forum e-mail Address – **forum@artp.org.uk**

With many apologies to Zoe Mason and her colleagues – this abstract was presented at the ARTP Winter meeting 2001 and was not included in the previous edition of Inspire.

Pulse Oximetry in a COPD clinic – use of arterial blood gas sampling to evaluate the BTS Guidelines for COPD

Z. J. Mason, C. G. Billings, J. C. Waterhouse, R. A. Lawson (Royal Hallamshire Hospital, Sheffield)

A COPD clinic started here last July. On arrival patients had resting SaO2 measured (Minolta Pulsox-3I). ABGs to ascertain the need for LTOT were performed as per the guidelines (1). These suggest that if SaO2 is >92% using pulse oximetry the need for ABG sampling is reduced. There is confusion as to whether an SaO2 of 92% should lead to arterial sampling. Our practice has been that 90% triggers arterial sampling.

We wanted to establish criteria for our clinic and evaluate the guidelines.
22 patients had ABG measurements performed. These had SaO2 of 92% or less. SaO2 by pulse oximetry was plotted against PaO2.

The table below shows SaO2% at three levels and documents the ability of each level to detect a PaO2 under 7.4kPa.

SaO2 (%)	Sensitivity value	Specificity value	+ve predictive	-ve predictive
90	87.5	64.3	58.3	90
91	100	28.6	44.4	100
92	100	7.1	38.1	100

This pilot study indicates that a cut off of 91% by oximetry is the better predictor of the need for ABGs when assessing the need for LTOT. We will continue to take ABG measurements at SaO2 of 92% or below until we have 10 true positives recorded and re-evaluate.

Ref. (1) BTS Guidelines for the management of Chronic Obstructive Pulmonary Disease.
Thorax December 1997; 52 Supp

CLINICAL PHYSIOLOGY – JOURNAL REVIEW

JET – *The Journal of Electrophysiolgical Technology – ISSN 0307-5095*
EPTA WEB SITE ADDRESS: **www.epta.50megs.com**

JET is the journal published by The Electrophysiological Technologists' Association (EPTA). It is a substantial journal consisting of approximately 75 pages *(my admiration and congratulations to its Editor!)* between thick covers of an eye-catching turquoise blue carrying the EPTA logo on the front. There appears to be good support from equipment manufacturers in the way of full page black and white and colour advertisements.

There are many similar features to our own *'Inspire'*, with council news, professional news on education issues, dates of meetings/courses, reports of meetings, charity news and membership details. There are also scientific articles and case studies with a not unfamiliar plea from the Editor for 'more'. A nice idea was the book review in addition to a journal review and other useful features include directories of relevant websites and journals related to the field of neurophysiology, and a Health and Safety page that seems to follow-up issues raised by members and feedback in following issues.

The journal is well laid out and extremely readable.

As the links with other Clinical Physiology groups and exchange of journals develop it will be interesting to review issues from other areas that may strike a chord with ARTP members.

Jet: Volume 26 Number 2 (2000)

Correspondence

Letter from a senior neurophysiologist, trained in Pakistan, now working in Kuwait, describing the profile of his department. He describes the department environment, working patterns, staffing and activity levels and his educational (BSc) and professional background and career pathway. *(A working day from 7.00am to 1.30 pm in a warm climate with a department overlooking a garden of flowers and date trees ..... mmm!)*

Chief EEG Technician in the UK in the process of implementing a Departmental Disability Policy with the aim of ensuring provision of a measurable, high quality EEG service for users having disabilities (loss of vision/hearing, learning difficulties, speech/language difficulties, mental heath problems, reading/writing difficulties). He was seeking advice and views of members to develop a policy that may necessitate additional equipment, staff or carers for the department.

Health and Safety Issues

I.T. Equipment usage

Query as to whether there is a problem for Neurophysiology staff regarding postural problems or repetitive strain injury with the use of either IT or neurophysiology equipment. Also feedback was requested from readers on patients referred to neurophysiology departments with I.T. related symptoms and injuries.

Articles

The Fast Fourier Transform: What is it and how is it done

This paper, written by Dr Townsend, a medically qualified technologist, is a comprehensive and methodical explanation of, what appears to be, a very complex mathematical process. Refreshing my grey matter on 'Fourier Analysis' to start with I was then left way behind as the article developed further. However I felt that, for those technicians working with equipment using these principles on a daily basis, the article would provide very valuable theoretical background knowledge.

Electrodecremental EEG Patterns

This paper, written by Andrew Smith, described an EEG phenomenon seen during seizures, and included a comprehensive literature review of the subject. It then proceeded to describe 5 patient case studies with EEG tracings and discussed the abnormalities revealed.

Charting the changes: Educational issues - past, present and future

A very interesting article with many issues striking a similar chord to the history and problems surrounding training in Respiratory Physiology. Written by Yvonne Hewitt, Chairman of the Education Committee of the ECNE Board, the article looks back over the past 50 years in the training and education of Neurophysiology Technologists.

The first EPTA journal existed virtually from the outset in the 1950's with an examination process on two levels in place by 1952. An Education Board was set up by the Professional Bodies in Neurophysiology in May 1959 which was the forerunner of that still used today, the ECNE Board, established in 1966. The composition of the Board included medical and technical personnel as well as scientists. Full-time training courses were set up in London and later Newcastle upon Tyne, the latter being gradually superseded by the introduction of a Regional Supernumerary Training Scheme and ONC/HNC familiar to many of us 'of a certain age!!' in Respiratory Physiology.

The article continues to summarise the considerable progress that has been made since the 1970's with 'Specialist Options' during the HNC process, but also highlighted are familiar problems with official recognition of in-service training and grading issues. Finally the article outlines the changing role of the ECNE Board's Examination Committee to an Education Committee to meet the changing needs of the profession with the application for State Registration and the developments within the field of Neurophysiology.

My thanks to Judith Al-Seffar, Editor of 'Jet', for circulating the EPTA journal to the ARTP. I hope to review journals from other professional groups within Clinical Physiology in future editions of 'Inspire' ... Ed

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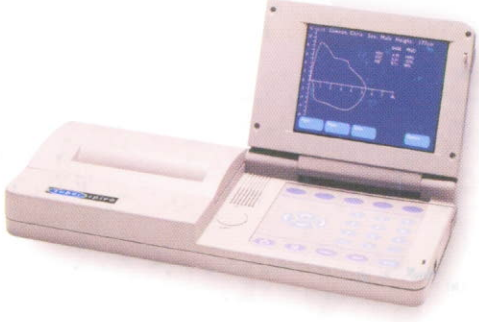

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