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Ian Barnes Does Quality in Histology

HCPC Looking for Chair and More

Education Committee Courses into the Future

Choice 2 Reminder for Your Pension
Calprotectin - the Full Range

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Front cover: Jessica Patel at the end of a 9 hour shift in a “satellite” clinical biochemistry laboratory
HCPC Seeks Clinical Scientists for Panel

The Health and Care Professions Council (HCPC) is seeking two HCPC registered clinical scientists to become panel members to participate in a range of independent panels to consider allegations of impairment of fitness to practise for individual registrants. They will provide professional expertise and can be involved in deciding whether a complaint should be referred to HCPC’s Conduct and Competence Committee or Health Committee. They can also take part in final hearings, listen to evidence and make decisions about a registrant’s fitness to practise and what action to take.

HCPC has 660 partners from a wide range of backgrounds and levels of experience including the NHS, clinical management, the private sector and academia. Panel members are paid £180 per day as well as travel, accommodation and subsistence expenses. The commitment for this role is in the region of 10 to 20 working days each year. All partners have to complete compulsory training.

Hayley Graham, HCPC’s Partner Manager commented: “This role gives people the opportunity to work on a wide range of issues and get involved with an independent regulator to safeguard the health and care of people using our registrant’s services. Potential candidates can read more about the role and download an application form (http://www.hcpc-uk.org/aboutus/partners/panelmembers).

Applications close on 29th March 2015.

POCT Ltd Buy Analox

Point Of Care Testing Ltd, (POCT Ltd) has acquired 100% of the shares of Analox Instruments Ltd, (Analox) a UK based instrument and reagent manufacturing company. Ian Cowie, Managing Director and CEO of POCT Ltd, commented, “Throughout a long and successful period of distributing Point of Care products, we now take over the additional manufacturing and distribution responsibilities of Analox Instruments by completing this acquisition”. POCT Ltd was founded in 2002 and distributes a range of high quality Point of Care portable blood and urine analysis systems. Analox Instruments was founded in 1973 and produces high quality analyser systems for the measurement of a wide variety of analytes. Products are used in over 65 countries world-wide. Further information may be obtained from Ian Cowie at email: ian@poct.co.uk

Sudoku

This month’s puzzle

Last month’s solution

ACB News | Issue 623 | March 2015
Welcome to the future of HbA1c.
Everything everywhere.
Foundations of a Quality Service

In the third video of the Barnes Pathology Quality Review series Dr Ian Barnes looks at fundamental issues pointing to three key NHS foundations of quality of services being effective, safe and providing a positive patient experience as possible. Ian points to reliability, robustness and responsiveness as central components we all must address.

KPIs and Potential for Misuse

Building on the previous video where he looked at pre-analytical factors such as phlebotomy and transport, Ian points to ISO 15189 as the key foundation for the clinical laboratory. Dr David Burnett sees ISO 15189 as a total change in approach to implementation of quality standards. The use of Key Performance Indicators is considered and Ian feels strong professional leadership and roles of professional bodies as very important. David however, while seeing KPIs as important points to the “huge potential for misuse” and advocates the use of the Sigma 95% Confidence Calculator which can be downloaded from the ACB website (download here if reading electronic copy).

Ian turned his attention to innovation in Histopathology and talks with Consultant Histopathologist Navid Momtahan about the implementation of high resolution digital imaging. Navid believes these techniques can improve efficiency of patient care and saying that, yet again, the hurdle to implementation is “the cost is in the laboratory but the saving is somewhere else in the hospital”.

Please Email on to Histopathologists

This third video is now live on YouTube and can be viewed by clicking on the image above for the electronic version of ACB News. For the printed copy simply put the title into your search engine to go straight to the video. Please do forward on this ACB News to your Histopathologists and others who are interested in quality issues in your laboratories.

Biomedical Scientists for Key Regulatory Roles

The Health and Care Professions Council (HCPC) is seeking two HCPC registered Biomedical Scientists to become visitors.

Visitors visit and assess existing and proposed education and training programmes delivered by education providers, using established monitoring processes. They also provide recommendations to the HCPC’s Education and Training Committee regarding the approval or ongoing approval of the programmes.

Visitors will be paid £190 per day and a £75 fee for postal submissions together with expenses. The commitment for this role is around 5 to 10 working days each year. All partners have to complete compulsory training.

Potential candidates can read more about the role and download an application form here: http://www.hcpc-uk.org/aboutus/partners/visitors
Thiopurine Metabolites

Whole blood 6-thioguanine nucleotides (6-TGN) and 6-methylmercaptopurine (6-MMPN)

This assay is increasingly requested in patients being treated with thiopurine drugs especially in:

- Treating patients with low TPMT activity
- Suspecting non-compliance
- Failure to respond to standard doses of drugs

Price: £27
Turn round: 2 working days

Further info: info@cityassays.org.uk • www.cityassays.org.uk • 0121 507 5348
Address for samples: Clinical Biochemistry, City Hospital, Dudley Road, Birmingham B18 7QH
ACB Webmaster Position

The ACB are seeking support from an enthusiastic member who would like to take on the role of webmaster and support the development of the ACB website along with the ACB office staff.

This role supports the maintenance of the ACB website, keeping it refreshed and up to date. In addition, the successful applicant will have shared responsibility to develop the website for our users, working strategically to continue the evolution of the site for the aims of the association and its membership.

For further details please contact Paul Newland, Director of Publications & Communications, by Email: paul.newland@alderhey.nhs.uk or Tel: 0151 2525 486.

Closing date for expressions of interest is Friday 10th April 2015.

HCPC Seeks New Leader

The Health and Care Professions Council (HCPC) is recruiting a new Chair to its Council. Potential candidates applying for the role must be on the HCPC Register or be an existing member of the Council.

The Chair leads the Council and contributes to the strategic direction of the organisation and is the primary ambassador for the HCPC, representing the interests of statutory regulation to outside bodies and the organisation at conferences, meetings and other events. Potential candidates will have experience of providing strong leadership, be able to uphold the HCPCs principles of transparency, accountability and will inspire confidence in the organisation and promote the HCPC’s central commitment to public protection.

The appointee would be expected to start on 1st July 2015 and the initial term will be four years. The successful candidate will be required to remain registered with the HCPC for the duration of their term. The Chair is paid an attendance allowance of £320 + expenses a day, and the role requires 120-150 days per year, divided between the Council and external meetings held throughout the UK and overseas.

Potential candidates can find out more about the role and how to apply from the HCPC website: http://www hcpc uk org/aboutus/recruitment/council

Applications close on Monday 23rd March 2015.

John Fenwick

ACB News is sad to report the death of John Fenwick on 10th February. John retired in 2004 after many years in the Clinical Biochemistry Department at Burton General Hospital and before that worked at Selly Oak Hospital in Birmingham.

Focus on Deadlines . . .

If you are intending to come to Focus 2015 in Cardiff then do remember that you get a discount if you book early. Early booking for ACB Members is £380 and £425 for ACB Temporary Members.

You need to book by 13th April to get this rate for the full conference package which includes the conference dinner.
Association of Clinical Pathologists

29th ACP Management Course

Hardwick Hall Hotel, Sedgefield, County Durham
Wednesday 2nd – Friday 4th September 2015

A wide ranging, residential, 3 day course introducing management issues relevant to the running of a modern pathology service. It is intended for Specialist Registrars and Trainees in their final year of training, Clinical Scientists and those who have held their first Consultant post for less than 2 years. The course will address the following subject areas:

- The NHS Reforms
- Clinical Governance
- Financial Management
- Demand Management
- Appraisal, Job Panning & Revalidation
- Self Management
- Future Organisation of Pathology Services in the UK

Course fee: £595.00 for ACP Members, £620.00 for non-Members.
Includes a pre-course folder, course information handbook, en-suite accommodation, all meals, refreshments and course dinner.

Full details from: Paulene Horrocks, Association of Clinical Pathology.
Tel: 01273 775700. Email: office@pathologists.org.uk
Application form: www.pathologists.org.uk
**Professor Wu Speaks at Kirkaldy Meeting**

ACB Scotland is delighted to extend a warm welcome to Professor Alan Wu who is visiting Scotland and has kindly volunteered to speak at our Spring Meeting.

Alan is internationally renowned for his work in clinical chemistry, toxicology, cardiac biomarkers and pharmacogenomics. He is Director of Chemistry and Toxicology at San Francisco General Hospital and Professor of Laboratory Medicine at the University of California, San Francisco.

Since 1999, he has been Editor-in-Chief of *Clinica Chimica Acta*.

Professor Wu has written over 500 publications, including several books showing the value of clinical laboratory tests.

He is IFCC lead for the “Labs are Vital” programme, and will focus in his talk on how clinical laboratory science can be promoted.

---

**ACB Scotland Regional Scientific Meeting**

**Point of Care Testing**

**Dunnikier House Hotel, Kirkcaldy**

**15th April 2015**

10:00 Coffee and Registration

**Point of Care Testing**

*Chair: Dr Joy Johnstone, Kirkcaldy*

10:30 POCT Lactate and Potassium in the ITU Setting

*Mrs Judith Strachan, Tayside*

11:00 Lessons from a POCT CPA Accredited Laboratory

*Mr Tony Cambridge, Plymouth*

11:30 Scottish Point of Care Testing Survey

*Mr Jim Allison, Grampian*

12:00 POCT Ketone Measurement in Paediatrics

*Dr Gemma Gallacher, Lanarkshire*

12:30-13:30 Lunch

13:30 AGM

**Point of Care Testing and Plenary Lecture**

*Chair: Dr Michael Murphy, Tayside*

14:00 POCT in Keepwell Projects

*Mrs Shona Hyman, Tayside*

14:30 POCT in Remote and Rural Areas

*Dr Anne Pollock, Highland*

15:00 Plenary Lecture

*Professor Alan Wu, UCLA*

16:00 Tea

To register please email sarah.cleary1@nhs.net by Friday 27th March 2015. The meeting is free to attend but registration is required for catering purposes.
The full audited accounts of the ACB are now completed and as in previous years are available in the Annual Report provided to members at the AGM and on the website. The ACB does not hold a political fund nor was any salary paid to, or benefits provided by, the union to, or in respect of, any member of the Executive, the President and the General Secretary. That document provides for you:

◆ The total income and total expenditure of the union for the period to December last.
◆ The amount of the union’s total income for that period that consisted of payments in respect of membership.
◆ The name and address of the auditor who audited the accounts contained within the annual return and the full audit report.

A member who is concerned that some irregularity may be occurring, or have occurred, in the conduct of the financial affairs of the union may take steps with a view to investigating further, obtaining clarification and, if necessary, securing regularisation of that conduct. The member may raise any such concern with such one or more of the following as it seems appropriate to raise it with: the officials of the union, the trustees of the property of the union, the auditor or auditors of the union, the Certification Officer (who is an independent officer appointed by the Secretary of State) and the police.

Where a member believes that the financial affairs of the union have been or are being conducted in breach of the law or in breach of the rules of the union and contemplates bringing civil proceedings against it the union or responsible officials or trustees, he should consider obtaining independent legal advice.
Despite a decrease in the number of cases of Clostridium Difficile Infection (CDI), it continues to be the major cause of hospital-acquired diarrhoea, causing significant morbidity, mortality and financial costs to healthcare.

The treatment for CDI in Europe and North America is still based around the administration of antibiotics including metronidazole, vancomycin and fidaxomicin. A major disadvantage of treating with antibiotics is the high risk of recurrent disease, especially in those who are elderly, taking other antibiotics and in patients with a history of reoccurrence.

Recurrent CDI can be defined as a relapse of infection with the same strain causing the previous episode or re-infection with a new strain of C.Difficile. It is estimated that reoccurrence occurs in ~20% of patients treated initially with either metronidazole or vancomycin, and after one reoccurrence, the risk of a further reoccurrence increases to 40% rising to 60-70% after more than two reoccurrences. Although there are new options for treating CDI such as fidaxomicin (a novel narrow-spectrum macrolyclic antibiotic), there is pressing need for a different approach; treating antibiotic-associated diarrhoea with antibiotics doesn’t seem theoretically sensible.

Gut Microbiota

The indigenous gut microbiota refers to the bacterial population that reside in the intestine, and a ‘healthy’ gut microbiota consists of a dense and diverse microbial community. A typical gut microbiota is dominated by obligate anaerobes; Bacteriodetes, Firmicutes and Actinobacteria and facultative anaerobes of the Proteobacteria group. Interestingly, one third of our human gut microbiota is common to most people, while two thirds are specific to each one of us. It has been stated that your gut microbiota is like an individual identity card! As well as aiding digestion and playing a major role in immunity, a healthy gut microbiota is essential for colonisation resistance against infections such as CDI. Where the gut microbiota is disrupted this results in dysbiosis and it is this that is the major risk factor for developing CDI.

Faecal Transplant

The concept of ‘Faecal Transplantation’ also known as faecal microbiota transplantation, faecal biotherapy and bacteriotherapy, was first described as a treatment of food poisoning or severe diarrhoea and recorded in Chinese literature from the 4th and 16th century. It was referred to as ‘yellow soup’.

It is a treatment strategy with the much needed different approach by restoring the diversity of the gut microbiota and reversing dysbiosis. The modern method involves a blended and filtered faecal suspension prepared from a fresh donor stool which is administered to the patient via the upper or lower gastrointestinal tract by nasogastric/duodenal tube, colonoscopy or enema.

Numerous studies have concluded that faecal transplantation holds great promise as a therapy for recurrent CDI but large, randomised double-blinded studies are needed for its routine widespread use and the concept of a customised microbiota pill for the treatment of CDI would be most welcome I’m sure!

Further Reading

Practical Paper Feedback: Performance in Autumn 2014

The FRCPath Practical paper is designed to test candidates’ skills in designing and performing a laboratory experiment and interpreting the results. The examination is split into three sections which reflect this. During the first, which typically lasts an hour, candidates are presented with a problem and asked to design an experiment to investigate this. During the rest of the examination, candidates are asked to perform an experiment and describe their findings, and also to comment on a set of data with which they are provided. The whole examination lasts 3 hours, and each of the three sections attracts an equal share of the marks.

The practical paper in September 2014 followed this broad structure, although with a change on order. During the first hour, candidates were presented with two sets of data, one from 1999 and the other from 2009. Each set contained results from 40 patients, showing age, gender, total and HDL cholesterol. Candidates were asked to summarise and comment on the two datasets. The question stated that measurement of HDL-cholesterol is challenging, and this was intended to direct attention towards any differences in HDL results between the two datasets.

After answers to this had been collected, candidates were asked to design experiments to investigate any effects of a change in method for measuring HDL cholesterol (from precipitation to homogenous assays) on results. They were also provided with serum samples which had been stored in several different ways, and asked to assess the effects of different storage conditions on total and HDL cholesterol results.

The overall pass rate was 77%. The examiners found some candidates’ handwriting difficult to read, and a few candidates may have lost marks as a result.

Data Interpretation
Sixteen of twenty-two (73%) candidates satisfied the examiners in this section. Successful candidates provided descriptive statistics for the cholesterol and HDL concentrations in the two datasets, and used an appropriate statistical test to compare the two time periods. Some candidates lost marks by splitting the datasets according to patients’ gender (thus losing statistical power), through mathematical errors or through failing to discuss the results.

Experimental Design
Seventeen candidates (77%) passed this section. Successful candidates showed a clear understanding of method comparison. Many failed to comment on the confounding effect of demographic change in cohort studies; but by itself this was not taken as a reason to fail candidates. Some candidates lost marks by concentrating on some areas of method comparison to the exclusion of others.

Laboratory Benchwork
Fifteen candidates (68%) passed this section. Those who did badly wasted time describing how they would perform the experiment (rather than actually performing it), or by performing a multi-point calibration where a one-point calibration would have sufficed. Other candidates failed to determine concentrations, or calculated these incorrectly – one candidate obtained an implausibly high HDL concentration, and failed to recognise it as such. A few candidates based a response to the underlying question (about the effect of storage conditions on results) on the absorbance values they obtained, and were given some credit for doing so. Some candidates performed the practical task well, but could have expanded more on the reasons for the results they obtained, and their implications.
A patient is found to have a serum digoxin concentration of 3.8 µg/L. Digoxin was stopped. Assuming a half life of digoxin in the serum of 40 hours, how long would it take for the serum digoxin concentration to fall to 2.0 µg/L?

**FRCPath, Spring 2014**

First calculate the elimination rate constant \( (k_d) \) from the half life \( (t_{1/2}) \):

\[
\frac{t_{1/2}}{k_d} = \frac{0.693}{k_d} = 40
\]

\[
k_d = \frac{0.693}{40} = 0.0173 \text{ h}^{-1}
\]

Using the natural logarithmic form of the integrated first order rate equation:

\[
\ln C_{p_t} = \ln C_{p_0} - k_d \cdot t
\]

where 
- \( C_{p_0} \) = initial concentration = 3.8 µg/L
- \( C_{p_t} \) = final concentration = 2.0 µg/L
- \( t \) = time for concentration to fall from 3.8 µg/L to 2.0 µg/L = ?

Substitute these values and solve for \( t \):

\[
\ln 2.0 = \ln 3.8 - 0.0173t
\]

\[
0.693 = 1.335 - 0.0173t
\]

\[
0.0173t = 0.642
\]

\[
t = \frac{0.642}{0.0173} = 37 \text{ h (to 2 sig figs)}
\]

Alternative forms of the integrated rate equation can be used:

1. 
\[
C_{p_t} = C_{p_0} \times e^{k_d \cdot t}
\]
2.0 = 3.8 x e^{-0.0173t}

\[
2.0 = e^{-0.0173t}
\]

\[
3.8
\]

\[
0.526 = e^{-0.0173t}
\]

\[
\ln(0.526) = -0.0173t
\]

\[
-0.642 = -0.0173t
\]

\[
t = \frac{-0.642}{-0.0173} = 37h
\]

\[
\log_{10} CR = -0.30N
\]

where \( CR = \text{concentration ratio} = \frac{C_{p_t}}{C_{p_0}} \) and \( N = \text{number of half-lives} \)

\[
\log_{10} \left( \frac{2.0}{3.8} \right) = -0.30N
\]

\[
\log_{10} 0.526 = -0.30N
\]

\[
-0.279 = -0.30N
\]

\[
N = \frac{-0.279}{-0.30} = 0.93
\]

\[
t = 0.93 \text{ half-lives} = 0.93 \times 40 = 37h
\]

---

**Question 167**

Current NICE guidelines for the use of newer agents in the treatment of Type 2 Diabetes recommend that GLP-1 agonists (e.g. exenatide) should only be continued after 6 months if the HbA1c concentration has fallen by at least 9 mmol/mol compared to baseline. If the biological within-subject variance is 5 mmol²/mol², what analytical precision must the assay achieve in order to be able to detect a true fall of 9 mmol/mol with greater than 95% certainty?

Two tailed \( z \)-distribution:

<table>
<thead>
<tr>
<th>( P(%) )</th>
<th>10</th>
<th>5</th>
<th>2</th>
<th>1</th>
<th>0.2</th>
<th>0.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>( z )</td>
<td>1.65</td>
<td>1.96</td>
<td>2.33</td>
<td>2.58</td>
<td>3.09</td>
<td>3.29</td>
</tr>
</tbody>
</table>

*FRCPath, Spring 2014*
As we move into the last few weeks before the 2015 scheme comes into place the pace of activity is really gathering for unions, the Pensions Agency (NHSBSA), NHS Employers and the Department of Health alike:

1. The consultation on the detailed draft legislation and regulations for the 2015 Scheme and associated transition arrangements has closed and these are making their way through the formal parliamentary processes which must conclude before Parliament rises on 30th March.

2. The Pensions Agency, in partnership with NHS Employers and NHS unions, has released additional communications, both written and videos, to help scheme members (and employers) understand the changes. These can be accessed via the Pensions Agency website at http://www.nhsbsa.nhs.uk/Pensions.aspx and follow the link to the Members Hub.

3. Members should have or will shortly be receiving a pay slip leaflet with a Choice 2 reminder and further information. This can also be downloaded from: http://www.nhsbsa.nhs.uk/Documents/Pensions/Payslip_Leaflet_2015_(V1)_online_22.12.2014.pdf

   A Choice 2 Decision Tree has also been posted to indicate what you should be thinking about: http://www.nhsbsa.nhs.uk/Documents/Pensions/decision_tree_-_choice_and_tapering_(V0.8)_-_Formatted.pdf

4. Again, in partnership NHSBSA, NHS Employers and unions have been running a series of 4 webinars to brief employing authorities on the new scheme and what they have to do in readiness. The content of these can be accessed via the NHS Employers website at: http://www.nhsemployers.org/events/2015/03/new-2015-nhs-pension-scheme-arrangements

   They have been increasingly popular and we might suggest that local employers and their union representatives could benefit by viewing them together. The last one is on 3rd March 2015.


6. Scheme identifier logos. Although it may seem trivial the communications team are seeking to use every device to help members follow the information for the schemes relevant to them. The colour code of orange for 1995, blue for 2008 and violet for 2015 will be used in all their literature.

**Choice 2 Reminder**

If you are eligible for Choice 2 but have not yet made your deliberate decision now is the time to dig the letter and information from the bottom of your “to do” pile, consider the issues for you and make your considered choice. DO NOT DELAY further! The closing date is 16th March 2015 (except for relevant staff in Public Health England (PHE) where it is 29th May 2015 due to late inclusion in the exercise). In the absence of an expression to opt into the 2008 scheme with its Normal Pension Age (NPA) more closely aligned to the new 2015 scheme the “default” choice is that...
you will stay in the 1995 scheme. The key issue then is that to take your 1995 final salary benefit at the 1995 NPA of 60 you will not be able to accrue further pension in the 2015 scheme.

The Choice 2 Decision Tree on the NHSBSA website has useful prompts to help you make your decision.

**Choice 2 for Public Health England Staff**

The Choice 2 decision for PHE members is more complicated. The underlying rationale for Choice 2 is the same: Your original Pensions Choice decision to stay in the 1995 scheme would have been made on the assumption of an enduring NPA of 60. Transfer (at some point on or after 1st April 2015) to a new scheme with a later NPA means that this assumption is no longer valid.

Choice 2 in PHE will only affect how your previously accrued NHS benefit is calculated. PHE members have the additional complexity of a compulsory transfer to equivalent Civil Service Schemes – final salary based for those with full or tapered protections and a CARE-based scheme for those who would otherwise have transferred to the NHS 2015 scheme.

The original DH presumption had been that PHE members will take an offer of a bulk transfer of their preserved pension rights from the NHS 1995 or 2008 schemes into the Civil Service schemes. However the details of the terms of that transfer are not yet known. It is likely that the bulk transfer will be beneficial for many members as it will preserve the pension’s final salary link until your eventual retirement.

However, some may wish to preserve their previous accrual in the NHS scheme (albeit as deferred members, losing the final salary link). This will be a very personal decision based on your own career and pay circumstances and retirement plans. Members who may benefit from becoming NHS deferred members are likely to be those already at the peak of their career expectation and on maximum pay points. Choice 2 would let you choose the most beneficial option for such a deferred pension.

As PHE staff were originally excluded from the Choice 2 exercise they have a later decision date of 29th May. Hopefully the Bulk Transfer Terms will be known by then. For you this is a decision that needs to be made even more carefully.

**OTGUP & ERRBO**

These acronyms may sound like minor characters in Harry Potter but refer to two new provisions arising from the 2015 scheme.

OTGUP is “Option to Give Up Protection” and will apply to a relatively small number of members with protection in the 2008 scheme for whom the 2015 option maybe better.

ERRBO is “Early Retirement Reduction Buy Out” and will let anyone in the 2015 scheme, with its NPA the same as State Pension Age (SPA), pay extra into the scheme to retire earlier than SPA without actuarial reduction.

- More on these two concepts in the next briefing. You will not need to make any decisions about them just yet.
Running a Spoke Through the Night

Jessica Patel, AfC 4 Bank Worker

If you had told me just 12 months ago that I would be working through the night in a Clinical Biochemistry department as a Bank Worker, AfC Band 4 I would have been surprised. I had just finished my MSc in Biomedical Science and was looking for a trainee position as a Biomedical Scientist, which is not easy without some experience. After searching around local hospitals for volunteer work I came across a lab that was looking for Bank Staff and after an interview I started work in the specialist Vitamins laboratory. However, there was an acute shortage of out of hour’s staff developing as a number of the trained BMS staff were retiring or moving on. After my first few weeks I was selected to be trained as an AfC 4 Bank Worker that would work through the night.

Training as a Band 4 Night Worker

We have a “hub and spoke” laboratory system with an out of hour’s service at both our hospitals, which are about five miles apart. Our two acute hospitals both have ITU and Emergency Departments. I was being prepared to work on the overnight shift at the “spoke” laboratory. The shift pattern is from midnight until 9 am. I was trained in a list of duties, suitable for AfC Band 4 to be able to keep the “spoke” laboratory working with help from the Biomedical Scientist at the “hub”.

The duties include:

- Booking in samples and preparing them for analysis.
- Adding samples to the biochemistry analysers.
- Maintenance of our clinical biochemistry analysers including changing bulk solutions.
- Taking a variety of phone calls.
- Correct ways of packaging samples and interacting with transport services.
- Understanding key tests that might come in during the night including CSF, Microbiology and calls from other laboratories around the country for specialist toxicology tests such as ethylene glycol and how they should be dealt with.

After a month of daytime training including working the Blood Sciences call centre, I did a short period of shadowing night work, then set off on my first single-handed night shift.

How it Works

I interact with the Biomedical Scientist working through the night at our hub laboratory in West Bromwich. We are a “two man team”, separated by five miles of the Black Country, with my spoke City Hospital lab being close to central Birmingham. There is also a Band 6 Biomedical Scientist working in Haematology sharing the spoke laboratory with me. My role is to prepare samples and place them on the analysers. I do not authorise the work or give out unauthorised results from our laboratory computer system, as this is the responsibility of the Band 6 at the larger laboratory.

Having undertaken this role now for approaching six months here are some key reflections:

On a quiet night when things work as expected, I prepare 50-60 samples including booking in most of the work for Biochemistry and Haematology and placing them on the...
analyser. I maintain the analysers as required but do not undertake the full daily maintenance through the night and neither have I been trained to load on reagents. This can be an issue as sometimes reagents run out and it does appear that with appropriate training I could load, calibrate and QC a reagent pack. The bleep goes perhaps 5-10 times a night and usually I can handle the queries myself. For example, most result enquiries are for work that has already been authorised by the BMS 6 at the hub laboratory and I can give these out. Occasionally I have to refer the call onto my colleague if the results are still “hanging” on the computer unauthorised. Of course if we keep up with the work then the results are available on screen around the hospital. The bleep activity really reflects how on top of the work we are and sometimes the perceived convenience of phoning the lab rather than looking up things on ward terminals.

Sometimes things happen which are unexpected and this can lead to some interesting situations, which can be quite stressful. For example, the piece of software linking our Biochemistry analysers to the main laboratory system can occasionally fail. When this happens ones pulse rate increases fast! However, I have learnt that there are always ways round difficult situations. In this particular case, which has only happened once, we had to enlist the help of the Consultant on-call – someone who is surprisingly friendly when woken at 3 am. We arranged to put a taxi service in place and instead of me analysing samples, the results of which would not be seen at the hub, I interacted with friendly Birmingham minicab drivers to get samples over to my colleague. As well as helping to put in this ad hoc alternative system I talked to a number of users and explained the situation. Junior doctors are surprisingly nice when they are kept politely informed.

**Unpredictable Nature of Night Work**

One thing I have learnt over the last few months is that while much is predictable, there are elements of the service that are not and this is a difficult management issue.

For example, a seemingly normal night can become exceptionally difficult when our analysers decide to malfunction. There are also times when there really is very little to do and during these periods, it would be good to have something tangible to get on with.

Having worked night shifts, including up to five consecutive nine-hour nights, with a couple of days off before working nights again, for eight weeks it has certainly been interesting to try and adapt. Living a “nocturnal” lifestyle can have a major impact on both home and social life as it feels as though you are living in a different time zone to people most close to you. Although one may think it is something you can get used to, coping with shift working is not as straightforward. Perhaps laboratories need to have a little more understanding of shift working and the impact on worker efficiency. I believe this is looked at in more detail in other working environments where shift working is a key component. It is interesting to observe how other staff around me copes with shift patterns. Some people get really active through the night as a way of coping, while others appear to be worn out through the night. Certainly, one thing this experience has taught me is that greater understanding of how to work effectively at night would be really useful in the clinical laboratory.

**Excitement of Responsibility**

Looking back a few months ago when I did my first night shift I still remember how nervous I was. Thoughts about security during out of hours and my ability to tackle the required responsibilities ran through my mind, but I’m glad I had the determination to do it. There is a real sense of excitement and fulfilment in realising you are being trusted to have responsibility for a key hospital area through the night, albeit with a colleague a few miles away in the “mother ship” to fall back on when things go wrong. My personal aspirations are to gain a trainee post as a Biomedical Scientist, but in the meantime I know that I am doing a valuable job, which is helping to sustain our busy NHS laboratory and giving me great experience.
Position Statement on Reporting Blood Ethanol

Annette Thomas on behalf of the ACB Scientific Committee

A survey conducted by WEQAS in 2012 showed a diverse practice in the reporting of ethanol units. The majority, (64%) of laboratories in the UK reported their blood ethanol units as mg/dl (or mg% or mg/100 ml) compared with 28% that reported as mg/L, 8% reporting in mmol/L and one laboratory that reported in g/L.

In August 2014, following the publication of the Guidelines for laboratory analyses for poisoned patients in the United Kingdom; *Ann Clin Biochem* 2014 51: 312, WEQAS issued a statement to all its participants that mg/L should be used as the standard unit for reporting ethanol concentration. A reference to this document was included in the report to all participants.

**Current Position**

Analysis of the most recent WEQAS data shows a reversal of the 2012 data with 68% of participants now reporting their ethanol results as mg/L, however 28% are still reporting in mg/dL and one laboratory reporting in mmol/L and one in g/L.

**Recommendation**

To achieve harmonisation of units in line with the Guidelines for laboratory analyses for poisoned patients in the United Kingdom, it is recommended that laboratories report ethanol in mg/L for all clinical samples. Alternative local arrangements of reporting may be used for forensic analysis.

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**Reporting Units for Ethanol – 2012 Survey of UK Laboratories**

**Reporting Units for Ethanol – 2014 WEQAS Survey**
The first National STP Elective Presentation Day Meeting was held at the ACB Offices, London, on 17th December 2014. The meeting provided an opportunity for first and second year STP trainees to gain inspiration and ideas for planning their own elective. Short presentations, given by Life Sciences STP trainees who had completed or finalised their elective placement, highlighted the wide variety of exciting, challenging and rewarding options available to current trainees.

The first presentation of the day was delivered by Angela Ballantyne (Luton & Dunstable Hospital) who described her four-week elective to Gilbert Bain Hospital, Shetland. During her visit Angela undertook an extensive laboratory comparison (quality control systems, business continuity), participated in tutorial sessions and attended multidisciplinary ward rounds. Angela’s presentation provided an excellent insight into the logistical and practical challenges faced by a small hospital situated in a remote location.

Amie Thompson, King’s College Hospital, London, presented her challenging and rewarding four-week visit to Manipal Teaching Hospital in Pokhara, Nepal, and described the practice of healthcare, in medical laboratory sciences, in one of the poorest countries in the world. The talk was particularly useful for STP trainees considering a similar elective, as details on how to arrange this placement through a company which specialises in healthcare electives overseas was provided.

Vellore Comparisons
Jenny Lake, Southend Hospital, made a twenty-six hour journey from Southend to Christian Medical College (CMC) hospital in Vellore Town (India) for her elective. During her visit Jenny undertook a method comparison (sweat analysis), clinical audit (Troponin T) and observed several analytical methods not previously seen during her training in the UK. Her talk also described differences in healthcare structure at CMC compared to a UK hospital; patients travel from afar for treatment and therefore blood tests are not repeated, tests are paid for in advance so no reflex testing can be offered and as CMC is a charity hospital which treats very poor patients, where possible procedures are used to save the patients money.

In addition to this, the talk provided useful information regarding the practicalities of organising an elective outside of the UK.

Following these presentations Chloe Eaton, John Radcliffe Hospital, Oxford, gave a highly topical talk on her four-week visit to Kerry Town, Sierra Leone, in order to setup a diagnostic laboratory for Ebola screening; the audience was given a detailed insight into this task by way of a photographic guided tour of the treatment centre and diagnostic laboratory facilities.

World Views Continue
Further talks given during the afternoon session described electives which included: rotations in clinical neurophysiology, vascular science and microbiology, and how these specialisms overlap and integrate with clinical biochemistry (Rachel Lopez-Real, Nottingham University Hospital and Alexandra Thurston-Postle, Nottingham City Hospital); pursuing a research interest by visiting a laboratory undertaking research into biomarker discovery and validation in dementia (Stuart Bennett, Royal London Hospital); and going to the Wellington regional genetics service laboratory in New Zealand and comparing differences in practice between New Zealand and UK genetic laboratories (Jennie Dring, Birmingham Women’s Hospital). The final talk of the afternoon by Liz Palmer (Prince Charles...
Hospital, Merthyr Tydfil) gave a very thorough and interesting overview of the Welsh Emerging Drugs and Identification of Novel Substances project. Setup in Wales in 2011, the project identifies emerging drugs with the aim of reducing harm to individuals and local communities.

Huge Range of Electives Provide Exciting Opportunities

Aside from providing an insight into the wide range of elective options available to trainees, the speakers also offered invaluable information regarding the planning stages for the elective; considerations for the aims and scope of the elective learning framework and mapping elective objectives to good scientific practice were discussed, as well as making initial contact with a prospective host institution. Overall the meeting was a huge success and feedback from those in attendance was positive. As a second year STP Trainee, the day highlighted that the scope of the elective is huge and really does provide an exciting opportunity to pursue a wider area of healthcare science outside of your routine training. It provides a great opportunity to learn new skills and continue your professional development as a Healthcare Scientist, which adds significant benefit to the STP.
Courses on Offer in 2015

The shape of ACB Training Courses has changed over the past few years as a result of the implementation of Modernising Scientific Careers, the expansion of the Association to include all laboratory medicine professionals and cost pressures. The Education Committee has a proven track record of organising high quality meetings providing a training day at Focus, supporting the management training course and in the past organise two residential courses per year. With the change in association membership we have also worked across the disciplines to provide relevant multidisciplinary meetings where required.

Focus 2015

For the past two years the Education Committee have run a multidisciplinary session and organised discipline specific sessions. This year Dr Rachel Carling is co-ordinating our multidisciplinary session entitled ‘The importance of the multidisciplinary team approach – Expanded Newborn Screening’. Starting with an overview of the process, the morning will review the role of the newborn screening and inherited metabolic disease laboratories, the confirmatory testing required and look at roles of non-laboratory professionals within the pathway. Quality, key performance indicators and audit within a screening laboratory will also be discussed.

For the Clinical Biochemistry discipline specific session we like to focus on the FRCPath examination. This year will be no different and it is the turn of the practical to be put under the spotlight. While we won’t be able to run a mock practical, Dr Chris Chaloner is going to review some example questions, summarise some of the mathematical tools that you need to know to interpret data and provide tips for surviving the process. At the request of the trainees we have also invited Tim James to tackle troubleshooting within the laboratory.

Trainees at a Focus Training Day having fun with A4 paper!
Tim previously led a very successful session at one of the residential courses and will cover topics including how to tackle lot to lot reagent variation, antibody interference and assay fliers.

The Immunology Professional Committee and Microbiology Committee have been involved in the discussions but it has been decided that there will be no discipline specific sections at Focus 2015 due to other meetings that are on offer.

**Residential Course 2015**

With training budgets being cut, the Education Committee with representation from the Trainees’ Committee has reviewed what we can offer and decided that in 2015 we will run one two day residential course between the 5th and 7th of October. This will be held in the Conference Centre facilities of the University of Birmingham, which has good transport links and is a central location making it accessible to all Trainees. Dr Rachel Webster, West Midlands Regional Tutor, will be organising this course which will focus on topics not covered well in text books to ensure that the time spent on these courses is well utilised. A programme will be published on the ACB website and circulated to all Trainees in due course. Topics will include EQA interpretation, Fluid and CSF analysis and interpretation, discussion of Duty Biochemist scenarios and specialist techniques presentations/workshops.

**Management Training Course 2015**

Sally Benton is again co-ordinating the highly successful CB management course. The course will take place at the University of Surrey between the 12th and 17th of July and will have sessions discussing R&D and innovation in the NHS, managed service contract and procurement, clinical leadership, finance and HR. Places are limited so we advise you to book early. Details will be published in the ACB News and circulated via the ACB Office to all Trainees.

The Education Committee hopes that the courses organised meet the requirements of the membership but if you have any suggestions please contact Hazel Borthwick, Email: deputydirector.educationalaffair@acb.org.uk
Clinical Biochemistry, as we know it, is a relatively young discipline and the time has come to remember one of its forefathers. Paul Trinder, or PT as he was known fondly by his scientific associates, was a warm unassuming man who came, via an unorthodox route, to have a considerable impact. On leaving school, he began his career as an analyst in a commercial laboratory working largely with coal, before being called up as a Private into the Royal Army Medical Corp. Trained at a multidisciplinary laboratory, he was then sent off to India to work in two other laboratories – the last studying the aetiology of tropical sprue. Returning to the commercial lab in 1946, he furthered his new ambition to become the Head of a Biochemistry Department by completing an external BSc in Chemistry from London University. He started work in the Biochemistry Department at Sunderland Hospitals as a technician for one month, a senior technician for four months before being appointed as Biochemist in 1949. This was the first of several appointments of a Clinical Biochemist in the North East – all of whom were Chemists, rather than Biochemists. Rising through the newly developing gradings to be a Top Grade Biochemist, he never felt the need to work elsewhere.

**Innovation and Methods Poured Out**

Having joined a Pathology Department that encouraged research and publications, PT began to develop his real forte of methodological development. His first paper in 1951 looking at rapid determination of sodium in serum, yielded results in minutes rather than hours and was, like all of his methods, intended to enhance the service offered by his department. Unfortunately, it was to be eclipsed very quickly by the introduction of the flame photometer but that did not hold back his creativity. Methods followed for potassium, cholesterol, salicylate, iron, calcium, carboxyhaemoglobin, SGOT/SGPT, aspartate amino-transferase, uric acid, glucose, xylose, phenylalanine, and HDL-cholesterol. These were only the ones that were published – with many others being developed to support the interests of clinician colleagues. His PhD was no extra effort, such was the amount of original work he was completing to choose from.

**Ubiquitous Trinder Salicylate Method**

Most in Clinical Biochemistry of a certain age will have measured salicylate using Trinder’s reagent. When a health scare suggested that the two most popular chromogens being used in glucose-oxidase-peroxidase methods might be carcinogenic, Paul rapidly published alternatives. The first used adrenaline,
and then, almost immediately afterwards, 4 aminophenazone as an alternative oxygen acceptor. It was this method, epitomised as the Trinder Reaction, which has had the most widespread impact and remains the most cited article in the Annals. Pretty good for an article from 1969. Interestingly the parallel need to change the reagents for occult bloods was sorted and applied within the department within a couple of days.

A local lad, always happiest amongst his test-tubes, Paul was not one for the conference circuit but would be amused when pathologist colleagues returned from meetings as far away as Moscow complaining that no one had known where Sunderland was but they had heard of Paul Trinder and were using his methods. Staff had to contend with taking phone calls from luminaries such as Norbert Tietz ringing from the States just to check something with him before putting it into their books.

**Analytical Rigour**

Undeterred by early automation such as the Technicon AutoAnalyser, Paul set to adapting many of his methods to cope with the rapid expansion of the department. Due to the activities of organisations such as Boehringer Mannheim, many of his methods – particularly cholesterol and glucose – became international standards on the big pieces of automation which became the norm. This shift to automation also finally led to Paul regretfully having to accept that he was no longer able to perform all of the work in the department but he remained central. In his own words, his management style was that of a benign dictator but his own personal experience made him passionate about developing others. Everyone in the department enjoyed his encouragement, their easy access to his encyclopaedic knowledge and the adventure of being involved in applying new methods and equipment as part of their own professional development. They were also ‘brought up’ in the analytical rigour which PT had always applied and that experience served them well at the time and in later appointments. Paul’s broader contribution was also recognised as an early recipient of the ACB’s Wellcome Prize for significant contribution to the quality of laboratory practice and Fellowship of the fledgling Royal College of Pathologists.

His retirement in 1985 was fittingly marked by a scientific symposium at which some notable speakers explored topics where his work had made significant impact yet remained the focus of continuing development. Throughout his long retirement he maintained his sharp intellect by keeping up with developments and the progress colleagues were continuing to make in his beloved biochemistry. Such was his humility that his family did not appreciate his contribution outside Sunderland and have only just come to understand his impact professionally.

PW
ACB News Crossword

Set by Rugosa

Postcard is Born . . . Now Use this Tool!

Last month the concept of the Innovation & User Feedback postcard was born. We thought it was original, but a quick Google search showed us Surrey Pathology Services have already produced one! Anyway, that aside, we designed and printed the thing in just two weeks but of course this is the tool not an end in itself. Our concept is now written up as a controlled policy for using the postcard as part of our quality system. The policy details how we will distribute, and also when they come pouring back, how the comments will enter into our quality system. Next month we will let you know how we are getting on, our first entry is from five healthcare staff at Birmingham Jail!

Across

9  Toe party line with gen about possible capacity for work (9,6)
10 More intoxicated (primarily excess spirit drunk) (7)
12 Cover novel arrangement in old gramophone record (7)
13/29 Fix old alcoholic cherry dye mixture for vitamin product (24)
14 Musical group without web access? (5)
15 Adult group retains North West backing (7)
18 Eccentric sect say conversion is bliss (7)
21 Adenoidal order of 7 doesn’t irk (5)
23 Their usual mathematical designation sounds wise (9)
25 Blood products – ingredients of broth in meal starters (7)
26 Distressing carbon monoxide death of conductor (7)
29 See 13

Down

1 Spy location (4)
2 Tread stage (4)
3 Mistake denied, point out bun not ordered (8)

4 Potential pathogen: apply bromine between six and ten (6)
5 Stevenson character going after corrupt deal for chemical (8)
6 Unbalanced rough (6)
7 South Asian republic lacks rain: production a lot less (3,5)
8 See 17
11 More biting returns concerning former British chemical company (5)
15 Cites informal information about the study of traits (8)
16 Role is to synthesise hormone (8)
17/8 Professional team polymath may misconstrue a symptom of 13/29 lack (8,8)
19 Injured city fans free of guilt (8)
20 Rate drugs that include 18 (5)
22 Refuse saddle (6)
24 Two short months to extract by boiling (6)
27 French bear belongs to us (4)
28 Tailors sell old textile measures (4)

Last month’s solution

DOCTOR'S COSMETIC
SHORT ABDOMINAL
SYNACTHEN TEST
Heads CRYOSTAT
ADDISON'S SALINE
FEUROXIMU
DIAGNOSTICIAN
LASED DENTISTS
CORRELATE FRANCE
THESIDUE LEADERS
Are your QC statistics puzzling you?

Simplify QC monitoring with Acusera 24×7 Live Online. Automatically generating QC statistics this interlaboratory data management and peer group reporting software helps laboratories take control of their QC data. Designed to complement our range of true third party controls, Acusera 24×7 enables instant identification of out of control tests via the unique dashboard feature. Online access anytime, anywhere to interactive charts and real time peer group data allows rapid and effective troubleshooting, while the newly added Acusera Advisor tool will recommend a minimum QC frequency and a set of QC multi-rules for each test, helping to reduce false rejections and minimise patient risk. Acusera 24×7, it’s as easy as 2 4 7.