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The College’s quarterly membership journal, the *Bulletin*, is the main means of communications between the College and its members, and between the members themselves. It features topical articles on the latest development in pathology, news from the College, as well as key events and information related to pathology.

The *Bulletin* is delivered free of charge to all active College Members, retired Members who choose to receive mailings and Registered Trainees, and is published four times a year, in January, April, July and October.

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Crunch time?

When I was a child growing up in the USA my favourite breakfast cereal for a time was Cap’n Crunch. I’d forgotten all about it (my teeth and dentist, alas, haven’t) until the advent of the current credit crunch. Such a satisfying alliteration. Such an unpleasant event. So unpleasant that it has almost pushed global warming and terrorism off the news agenda. I hadn’t quite grasped the seriousness of the depression until this weekend. I was talking to a relation who works in Social Security. Apparently lawyers are coming onto the shrinking job market as corporate and property sales grind to a halt. Lawyers being made redundant! That’s new. And that’s worrying.

The NHS is presumably not immune to the adverse financial environment we find ourselves in. But at least the demand is still there – the core business is expanding rather than contracting. Our population is ageing fast and the demands on healthcare can and will only increase. But will the funding rise to match that increase? Don’t bank on it. Will the government have any money left?

While the NHS tries to control costs it is also placing increased costs on pathology. Screen all patients for MRSA! Now! Not exactly a cost-free request/demand. And microbiology labs across the country (well, England, anyway) are faced with this demand. Is it clinically justified? Is it even cost effective? Do it anyway. Screening all healthcare workers will be next I bet. There is now a fairly urgent demand for some way of automating MRSA screening – right now it is labour-intensive, tedious and expensive. Any inventors out there? I’m sure there are plenty more demands and initiatives pathology departments will have to rise to. The inexorable rise of demands for new MDTs is one. I think that we really are victims of our own success sometimes.

It’s always interesting finding out why our colleagues went into pathology. On page 152 one junior doctor tells why she did. I hope she enjoys it at least as much as the rest of us have (most of the time anyway). However there may be a cloud on the horizon. We are training many histopathologists through the excellent training schools but medical workforce planning is not really that reliable. What if we produce an oversupply? Where will these excellent, well-trained doctors end up? Well the Credit Crunch may focus attention on the NHS pension – watch that space very carefully. Any revision on minimum retirement date could cause an exodus – if I had the choice of retiring at 56 or 65 I know which one I’d choose, and I don’t think I’d be alone. That should at least keep the job market fluid.

But there is another alternative – particularly for histopathologists. Australia! They’ve got a shortage, particularly in forensic pathology, it’s a wonderful country and a career move there would be well worth considering. I found this out in December when I dropped in on the Royal College of Pathologists of Australasia in Sydney. I’ll have more to say about that visit and pathology down under in the next Bulletin.

Let’s look at happier times. National Pathology Week 2008 continues to resonate through this issue with reports from up and down the land (pages 127–132). And our first steps into public education are bearing fruit (pages 138–140).

I particularly welcome Sue Armstrong’s article (pages 144–145) – we review a lot of interesting books (pages 178–184) but it is not often we have an author telling us about how they came to write one. And if you feel the need to set up a temporary mortuary there’s an article (pages 148–151) that tells you all you need to know.

Finally, there are some really plum College jobs on offer (page 156). Have a look. I fancy a few of them but I’ll stick with this one at the moment.

Professor John Croall
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FROM THE PRESIDENT

Communication, communication...

I suspect that some members of the College might be wondering what's happening to College priorities. This issue of the College Bulletin, like the January issue, probably has more space devoted to telling the public about what we do than it has on how we should do it. Speaking as one with a long-standing scepticism about the ‘communications skills’ emphasis of modern undergraduate medical curricula, I can sympathise. But College priorities have not changed. I am now three months into the new job and part of my personal learning curve is to see matters pathological from a wider perspective. If the public and politicians see pathology as synonymous with post-mortems and think that laboratory results come out of machines, we have a problem. The importance of having a good public profile is, I believe, about to get much greater. I suspect I will have a lot more to say about the global financial situation in future issues of the Bulletin, but you don't have to look far outside the laboratory to see what's coming. The current funding of the NHS is stable compared to most industries. But this time next year, do you expect things to be better or worse? When economic activity starts to recover, the pressure will be on the Government to repay those huge debts – which will mean yet greater constraints on public spending, even as things otherwise start to improve. At times like that it will be very, very important for high quality pathology to have a maximum public profile as a key element in high quality healthcare.

Science communications skills
Which is why the response from National Pathology Week has been so heartening. The College is now receiving a steady stream of requests, asking for pathologists – and not just the forensic type – to go and explain what we do, to schools and at public gatherings, in all areas of the country. We have a list of pathologists who we know are willing to help and we are increasingly able to provide support materials for public presentations. But we need more volunteers. So if you think you are not on our list and would like to help please tell Ruth Semple (ruth.semple@rcpath.org).

It’s clear that not everyone appreciates the importance of this work to the long-term health and stability of our profession. Our training curricula all mention communication skills (or how could they have got past PMETB?), so I was surprised to find that some trainees who had asked their educational supervisors if they could spend a day explaining pathology to sixth form students had been told they could not. Isn’t it important to be able to explain to members of the public the importance of what you do? Do you expect to continue to be held in high regard if no-one does that? Do you really expect to be paid well if the importance of your skills is not understood by those who, ultimately, pay your wages? I found myself saying that our curriculum ought to make the importance of communication with the public more explicit. Six months ago I'd never have believed I'd be saying that.

For the real enthusiasts we are looking at whether the College can facilitate training in science communications skills, perhaps by collaboration with the Science Communications Unit of the University of the West of England. See www.scu.uwe.ac.uk/index.php?q=node/156 and watch this space. It won't suit everyone. But those who prefer to keep quiet should be grateful to those who go out and bang the drum for pathology.

Curricula, under- and post-graduate
Speaking of curricula, our links with the Academy of Medical Royal Colleges has been bringing some interesting issues to my attention. The GMC is consulting on a new draft of its document on undergraduate training. Tomorrow's Doctors, and to my disappointment the much-anticipated return of basic sciences has not materialised. Of 176 numbered paragraphs, there is just one (No. 152) on the application of “...biomedical scientific principles, method and knowledge to medical practice”. It states that students should be able to “Explain the scientific bases for common disease presentations” and to explain the fundamental principles underlying appropriate investigations for common clinical cases. Just ‘common’ diseases. ‘Common’ is not defined. I have been unable to find any explicit mention of the need to understand the normal functioning of the human body, let alone its structure. New graduates should be well placed to understand the social needs of their patients, but with no mention of normal human reproduction, will they understand the physiological basis of their own advice on family planning? It seems that the old jibe, about new doctors having a good understanding of bereavement but being a bit hazy about its causes, will remain justified. Several Royal Colleges are objecting, but we all know what the outcome was last time.

The merger of the GMC and PMETB is being planned, and preliminary consultations are starting around how the new systems will work. At
present I am cautiously hopeful that the result will be an overall reduction in bureaucracy and delays rather than an increase, but there’s much yet to be decided.

Medical Education England is starting to be developed, under the Chairmanship of Sir Christopher Edwards. The organisation was first proposed by Sir John Tooke as part of his report on postgraduate medical education after the MTAS debacle. As initially proposed, it seemed like a good idea; but there have been some subtle shifts in emphasis in the documents (and the unattributable comments) emerging since then. The implications are that the organisation will extend its activities beyond the delivery of postgraduate education, taking a greater interest than expected in the development of curricula and examinations. Perhaps even removing the role of the Royal Colleges in those areas? That would be absurd. The Colleges all work not only to keep postgraduate curricula up to date, but also to predict future needs. You can’t maintain appropriate curricula in a complex, rapidly evolving field unless you are intimately involved in delivery of the service. In that process, oversight by PMETB already feels like a large dose of treacle, raising standards in some respects but slowing reform. For the organisation that gave us MTAS even to hint that a quango might manage curricula and examinations better than the Colleges would be laughable were it not so terrifying.

But there’s more. The Tooke Report recommended that “The medical profession should have an organisation / mechanism that enables coherent advice to be offered on matters affecting the entire profession.” I had thought that the Academy of Medical Royal Colleges should do that, as the BMA is too much a Trades Union to be entirely credible in that role. But the Department of Health’s response states simply that “This will be one of the core functions of NHS Medical Education England”. Its limitation to just one of the four countries is not mentioned. There have been repeated assertions that Medical Education England (MEE) will be ‘independent’. As is so often the case, one wonders how the word is defined. By George Orwell, perhaps? MEE is funded by the Department of Health. It has a broadly-based ‘Members Council’, but recently proposed Terms of Reference include a Board that will meet monthly and – in current proposals – has executive members who all appear to have a line of accountability to the Department of Health. There are also non-executive directors who are yet to be appointed, but with selection on the basis of as yet unknown criteria. Is this to be called ‘independent’? What does that word now mean? Independent of the professions whose advice it claims to convey, certainly. My conclusion is that the Academy of Medical Royal Colleges needs to be strengthened and we need to improve our communication skills.

Reform of the law on coroners and death certification

One hopeful item in what feels like a rather gloomy President’s Column is the fact that our archaic laws on coroners and death certification are, it seems, to be reformed at last. The Coroners and Justice Bill is at last making its way through Parliament. The involvement of the College by the Ministry of Justice and the Department of Health in the production of this Bill has been very close, a welcome contrast to our experience in some other areas. There are aspects of the Bill where improvements can be made, naturally. The College has made representations, and at least some of them seem to be having an effect. Overall, even as they stand the proposals are a definite improvement – especially the proposals for the reform of death certification, with the introduction of scrutiny of all death certificates by independent (it’s that word again!) Medical Examiners. That reform alone would be far more effective at catching the next Harold Shipman, I suggest, than any amount of medical recertification.

So I was somewhat surprised to find, when the Bill was published, that it had been hugely expanded by the addition of several unrelated ‘justice’ items, as disparate as child pornography, anonymity in trials, sentencing, criminal memoirs and an amendment to the Data Protection Act 1998. This last item is generating considerable controversy. It would allow a ‘designated authority’ (i.e. a Government Minister) to make an ‘information sharing order’ and thereby overrule the confidentiality requirements of the Data Protection Act. This could be applied to medical records; so a furore has erupted, with vigorous objections from the BMA, the Academy and other medical organisations. From the perspective of this College, we share the concerns about confidentiality, but we are also concerned that all these unrelated and controversial items in the Bill might derail the passage of the reforms that we do want to see enacted. I have sent a letter to Jack Straw on behalf of the College, making this point; but as usual we can only persuade, not enforce.

e-learning

The good news on the Medical Examiners is that a curriculum has been agreed, an e-learning training package is being assembled, and (subject to the Bill passing into law as planned) recruitment should be starting in 2010. I suspect that significant numbers of Fellows of this College may be interested in these part-time posts, encompassing as they do the whole of medicine, a bit of law and a bit of investigation. Not to mention communication skills, of course. The e-learning approach to training is being modelled on the much larger pathology e-learning project being led for the College by Jem Rashbass. That project is progressing, albeit slower than Jem and I would wish. Progress
has been largely invisible because you can't really launch an e-learning resource until whole sections are complete, but I hope there will be some announcements relatively soon.

**The National Medical Laboratory Catalogue**
The methods and some of the materials from the e-learning project are also likely to be linked to the new 'National Laboratory Medicine Catalogue', i.e. the 'Pathology Formulary' as recommended by Lord Carter. I have for some years been arguing that the NHS needs a national mechanism to decide when a new laboratory investigation is brought into NHS use, instead of relying on disparate local processes to make what are often very difficult decisions, with the inevitable result being 'postcode diagnostics'. This argument is now being driven by the need for a single national pathology catalogue to underpin the implementation of national IT systems. It has been agreed that the College will host a new Governance Board, funded by the Department of Health, to oversee and quality control the content of the catalogue in partnership with other relevant agencies such as NICE. By the time you read this we will have advertised (by email) five new part-time posts for pathologists to lead the work. I hope that this project will facilitate the dissemination of authoritative online advice on test use (probably expanding on the successful patient-oriented platform provided by Labtests Online, as is also envisaged by Lord Carter). Undertaking a cost-benefit analysis for laboratory investigations is very often hampered by a lack of good data, so with luck and funding this development will also allow us to encourage research into the appropriate use of such investigations. There will undoubtedly be more announcements on this, as it is potentially a large project.

**And more communication**
My invitation to email me, to tell me what you think, made in my previous President's Column, has not yet overwhelmed my inbox. The invitation remains open. Indeed, the absence of an email avalanche is slightly worrying. So I'm going on a communications offensive.

By the time you read this you will, I hope, have received a 'spam' email asking for your input on how the College communicates with its members – naturally including questions on the use of spam emails. We are advertising for a new post of 'College Website Advisor' to help co-ordinate and update the website, no doubt taking note of responses to the website questions in the questionnaire. We will then be asking you more questions, on what College meetings you would like to see, how you'd like to see them, what you don't want to see and any other aspects of what the College does for you (and vice versa).

When my 'inbox' overflows, I'll let you know. It's not full yet.

**Professor Peter Furness**
President
Peter.Furness@rcpath.org

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**Reference**
1. Implementing the Tooke Report: Department of Health Update. Published November 2008 by the Department of Health, Modernising Medical Careers unit
Public engagement update

I hope that you enjoyed reading about some of the events held during National Pathology Week 2008 in the last issue of the Bulletin and that they inspired you to plan an event this year. There are several more reports in this issue, as well as a summary of the evaluation of events and news about the Outreach Project and other science communication opportunities.

Evaluation
The hard work didn't stop when National Pathology Week was over. As you will see from Ruth Semple's summary on pages 132–134, an analytical approach has been taken to feedback from organisers and participants. Encouragingly over 90% of participants were satisfied with the event they attended and 97% of organisers said that they would like to hold another event in future. The results are a testament to the enthusiasm and hard work of event organisers around the country.

The Outreach Project
Ruth also reports on an exciting event that has been developed as part of the outreach project. The aim of this project is for pathologists and scientists to take events to schools to inspire the next generation of pathology professionals. There is also information about the Science and Engineering Ambassadors Programme, which you might like to consider joining.

Website
The National Pathology Week website will be relaunched in April with new material and information about National Pathology Week 2009. Online resources from last year will still be available. The website will be updated regularly, so do have another look at www.nationalpathologyweek.org.

Tips and template
In this issue you'll also find some tips on how to organise a successful event, based on the experience of event organisers around the country. There is also an example of an event template, which can be used to recreate an event or just give you some ideas to get you started. More examples and a blank template will be available on the National Pathology Week website. If your event went well, please fill in a template so that others can learn from your experience.

Heart Theme
As announced in the January Bulletin, this year's National Pathology Week will have a 'heart' theme. If you have any resources that could be used to promote the role of pathology in the diagnosis and treatment of heart disease, please let us know. We would welcome any images of heart-related pathology and would particularly like to feature case studies of individual patients.

Regional Coordinators
Each Regional College Council has appointed a National Pathology Week Coordinator. Coordinators will maintain a programme of regional events, provide help and advice and distribute promotional materials when they become available. The coordinators will contact each pathology department in their region regularly, so please read their emails and let them know of any events you have planned.

Communication
I would like to echo the President's message about the importance of communication about pathology, both within the healthcare environment and to the wider public, school students and policy makers. Your National Pathology Week or outreach event might be the one that encourages a science student to pursue a career in pathology, inspires a member of the public to follow a healthier lifestyle, prompts a hospital manager to consider the effect on pathology of employing a new surgeon or prevents a health minister cutting spending on pathology services. Pathologists and scientists reached thousands of people in 2008; 2009 offers even more opportunities to dispel the myths surrounding the specialty. So if you haven't started planning your event already, now is the time to start. And don't let some of the more elaborate featured events put you off, even small, simple events can have a big impact.

Dr Suzy Lishman
Assistant Registrar
National Pathology Week Lead
Suzy.lishman@pbh-tr.nhs.uk
As our centrepiece for National Pathology Week, we held an open day for members of the public to visit the Pathology Directorate within Leicester Royal Infirmary on Saturday 8 November. Our aims were to increase awareness and understanding of pathology.

The open day comprised one hour in histopathology/cytopathology, and a second hour in microbiology, immunology and transfusion medicine/haematology. The histopathology visit comprised a tour that followed a specimen through the process from beginning to end and is described by two young visitors below. The remaining sections of the visit were largely based around poster displays, demonstrations and discussion with volunteer members of staff.

All our visitors were lay members of the Trust and their friends and families, which allowed control over logistic issues, security and health and safety. The event was ticketed, with a total of 216 tickets available – but the level of interest was at least twice that number. 172 visitors attended on the day and 152 provided feedback, which was unanimously positive. Our aim seemed to have been successfully achieved. A number of visitors had been patients in the Trust and were very appreciative of the opportunity to learn more about pathology.

The open day was hard work for the 50 or so volunteer staff, but at the same time was extremely rewarding for everyone who took part. We will definitely do this again, but not until we’ve all recovered from this one.

Dr Angus McGregor
Head of Service for Histopathology and Cytopathology

Visitors’ reviews

Oli Wheatley (age 17): The tour of the labs started in a receiving room, where specimens ranging in size from small pieces to whole organs are cut up. Gruesomely, a whole bowel was on show, and cancer could clearly be seen in one area of it. I think it was very interesting to see the specially ventilated worktops as well as the bowel itself – it was larger than I expected.

The tour then moved on into a ‘slicing’ room, where the chopped-up samples, encased in wax, were sliced even smaller on a special machine. The slices were placed in a water bath at, I am told, about 60°C. The slices were picked up on a glass slide with extraordinary skill – the slice was 4 μm thin!

After this great show, we were moved through the stain section, where we saw different coloured cells on slides. The electron microscopy section had a very nice display illustrating how high a magnification one of these can reach. Amazingly, we could see the common cold virus, 500 million of which can fit on a pinhead! Then we were treated to a microscope viewing session to see how different types of cancer look from normal cells – something which I had never seen before.

Finally, we were taken through to the cervical screening room, which had some brilliant pictures on the wall and very informative explanations.

All in all, I had a great time. It was nice to see everybody who my mum works with, and I never knew the amount of work that goes into it all. Brilliant.

Lauren Humphreys (age 15): On Saturday 8 November, I attended an open morning at Leicester Royal Infirmary’s Histopathology Department. I was part of a group of ‘guinea pigs’ who were there to check that the tours held later on would run smoothly.
When we arrived, we were greeted by Dr McGregor. Histopathology was not at all how I had imagined it. The first stop on our tour was a ‘cut-up’, where we were shown how specimens are received into the lab. We met Dr Salli Muller, who told us that the specimens are all given a unique number and that this number stays with the sample throughout the laboratory. This is vital so that no mix up occurs! We were then shown how a specimen (gut in this case) is sampled, so that any areas of abnormality may be analysed further and put into plastic blocks for processing.

After processing, the sample of tissue was planted into wax and then, using a ‘slicer’ machine, cut to a wafer slice. Straight away it was dipped into water and mounted onto a slide. We were then shown how the sample was stained and told what the colouring on the slide meant.

To conclude the tour, we walked through to a training room and with the assistance of Professor Furness examined a slice of gut down the microscope. We were able to see what was wrong with the patient and the severity of the problem.

I thoroughly enjoyed the tour and found it very interesting. I was surprised at how long the whole histopathology process was and the many stages involved.

Following the tour, we were allowed to walk around and look at displays that had been put up. I went to see the cervical cancer display. It was really good and particularly interested me. I was shocked at the statistics and it made me realise how important it is to be checked. We were shown the different stages of the cancer and how it develops from one level to another. The most severe type of cancer was even obvious to me – nearly the whole nucleus had taken over the cell! We also had the opportunity to look down a microscope and see slides of cervical cancer.

I enjoyed the morning very much and found it really informative. It helped me to understand and appreciate what happens ‘behind the scenes’ in a hospital. I realised what an important role histopathology plays in diagnosing diseases and finding the cause of the problem.

National Pathology Week at Aintree University Hospitals

Laboratory staff from all departments started planning for National Pathology Week early in 2008. During October, we gave presentations to about 150 hospital staff at the monthly ‘grand round’ on the history of pathology at Aintree, cancer genetics, working in an army laboratory in Afghanistan and chlamydia, followed by a prize quiz.

On 7 November, we held an event for about 170 sixth-form pupils and teachers from local schools. We started with a presentation on what pathology is and some information on careers, followed by an interactive display and quiz. We even had our own ‘King George’ talking about porphyria and the scientific basis of his madness.

Forty-one school students, studying at GCSE or A level, completed the feedback questionnaire at the end of their visit. More than three quarters found the event interesting, enjoyable, participative, clear and satisfying overall. About half the students indicated that they would attend a similar event again next year.

Examples of comments made were:
• “presentation was good, doing tests ourselves also enjoyable”
• “very interesting and has guided me in a degree course decision”
• “good free gifts, syringe pens were absolutely amazing! More next time”.

Overall, we particularly enjoyed hosting the events as it made other hospital staff members and school students more aware of what our work entails and how we provide a service. We hope it may have initiated a career interest in some of the students. Finally, we thank the volunteer services within the Trust, members of the department and the media for their help in the organisation of the event.

Dr Charles van Heyningen
Clinical Director Pathology

Dr Ade Olujohungbe
College Clinical Tutor
Aintree University Hospitals
National Pathology Week at the Isle of Wight Pathology Department

“Shall we do something for National Pathology Week?”
“Humm…. dunno…”
“Oh come on, let’s do something…”
“OK then… we do want to show people what we do, so why not!”

So the conversation went (something along those lines) at the September Pathology Directorate Board Meeting. Once we had made the decision to ‘do something’, we got together a core group and started the ball rolling.

The team
Tracy Cheneler (Microbiology secretary, general organiser, minute taker and ‘she who must be obeyed’) signed us up on the College register of participants for the week. Within days, boxes of goodie bags, lanyards, badges, pens and folders had arrived from the College to support the event. This was augmented with a supply of biros, notepads and other goodies Tracy managed to extract from various industry drug representatives and laboratory suppliers who gave generously. We were going to wow our school groups and visitors.

Partner in crime was Helen Azzopardi (Microbiology Technical Head and doyenne of project management by Excel spreadsheet) who, along with Tracy, co-organised the local event. We decided to have an open evening for schools on the Thursday, followed by an open day for the public on the Saturday. A flurry of letters and posters went out to schools, hospital and GP notice boards inviting them to the evening event (schools) and advertising the open morning. By now it was mid October and D-day was fast approaching.

Planning the event
Some schools expressed interest and some didn’t have enough time to get permission from Governors to ‘approve’ an after school visit. When two schools had to pull out at the eleventh hour because of this, we made the difficult decision to cancel the school evening planned for the Thursday, much to the distress of two schools who had wanted to visit. We promised we would try and host a visit for them on a later date.

The main local event now would be the Saturday Open Day from 12-1600hrs. We decided that visits had to be pre-booked using the special help telephone number and email address set up by the college; these e-mails and telephone messages came straight to Tracy who then allocated a time slot for the visit tours, which would run at 15 minute intervals. We decided visits would be limited to small groups of 10 and with a lower age limit of 14 years. Bookings came in steadily. By the week before the event we were almost full! The local press ran an advert for the event on the day before the Open Day rather than a week or two beforehand, which didn't help, although in the end we did manage to find spaces for the few unbooked visitors. Virtually all Tracy’s normal work went out the window during the week before the event. On Friday Helen and colleague BMS helpers from the departments set up a display board exhibition of “What Pathologists do” in the Phlebotomy reception waiting area. This was to be the holding bay for the visitors before their booked tour.

The big day arrives
Saturday 8 November dawned wet and miserable. Would anyone show up? We anxiously waited, sporting our NPW lanyards and name badges. Pam and Angie on tea and biscuits in the reception area; meeters, greeters and guides were all present. Organised with military precision by Helen and Tracy, everyone had a colour coded spreadsheet roster of what they had to do, where they had to be and when. Helen and Tracy were armed with clipboards checking everyone was on standby and ready for blast-off. By 1145hrs the first visitors were milling around and assembled in the reception area.

“Would Group One tour come through please!” From then on it was non-stop….

Once ‘behind the scenes’, each group was greeted by the Lead Clinician Dr Suzanne Chapman and first given a quick overview of the main disciplines of pathology, using a flip chart Mind Map to outline what they might expect to see. (No gory stuff or body bits). Then after leaving their coats and a short health and safety briefing, the group was taken upstairs, escorted by two lab staff volunteers who remained with them throughout their hour-long tour.
**Cellular pathology**
The tour started in cellular pathology where visitors got to see a slide being prepared: tissue embedded in wax, then being cut with a microtome, put on a slide followed by the staining process. They were fascinated by the visual tissue images and colour patterns. Dr Andres Kulla, Consultant Histopathologist, was in his office on hand to take questions and talk to visitors about how tissue diagnoses were made and how important they are.

**Clinical chemistry**
The group then moved on to clinical chemistry where visitors were shown the automated systems that perform the bulk of serum analyses. A blood sample was followed through from requesting stage with barcodes to completion of analysis and sending the result to the clinician on screen. They were shown how the large analysers work and how important IT is within chemical pathology. As well as “big machines”, they saw demonstrations of manual techniques such as electrophoresis and separation science. As in other departments, key biomedical scientist (BMS) staff were there to give each group a short talk.

**Haematology**
The next stop was haematology, where each group was divided into two smaller groups to see the blood bank and the main haematology lab. In the blood bank there was a brief talk covering the various storage units and products held. They were told what happens to a unit of blood, including neonatal units and the blood stock fridges were displayed. At this point only one member of the public felt faint (and we suspect under 14 years old) but she went to the nearby first aid station and soon rejoined the group.

The tour also included being shown the platelet incubator and plasma freezers with a talk about platelets, fresh frozen plasma (FFP), the importance of donors, why the national donor pool is changing and how this is being addressed e.g. cell salvage. ABO and Rhesus D blood groups were explained with a practical demonstration of blood grouping.

In the haematology lab there was a demonstration of the technology involved in counting, identifying and measuring blood cells. Visitors were shown what ‘real’ blood cells look like and then shown abnormal cells. Diseases including sickle cell anaemia, malaria and leukaemia were described, with slides showing characteristics of abnormal cells. The science behind blood coagulation was also explained, including the mechanism of anticoagulant control and tests used to monitor anticoagulant therapy. Some clotting disorders were also briefly described such as haemophilia and thrombophilia.

Looking at blood cells proved popular and our enthusiastic BMS team waxed lyrical on their specialty, so much so that we needed to keep an eye on the time to ensure groups were not spending too long in any one area. With another group hot on their heels at 15 minute intervals, it was the job of the allocated ‘group monitors’ to keep the tour on time!

**Microbiology**
Last but not least, the tour reached microbiology. Here the process of culturing a sample was explained. Groups were shown different culture plates with various organisms growing, to illustrate how pathogenic bacteria are identified in the lab and picked out from commensal bacteria present in samples from non-sterile sites. Antibiotic sensitivity testing was explained and how this can provide their doctor with a choice of antibiotics to treat infections. There were culture plates with antibiotic discs to see, with resistant organisms such as meticillin resistant Staphylococcus aureus (MRSA), as well as other more sensitive strains.

Louise, Microbiology BMS, explained how the body surface is covered with commensal bacteria that can provide a protective role. She explained about hand hygiene in preventing transmission of infection with pre-prepared agar plates showing cultures from hand finger imprints taken before and after hand washing to illustrate this.

Lots of questions and lots of interest but the hour was up! After the laboratory tours, visitors were taken back down to a designated room to collect coats, complete evaluation forms and be offered a goodie bag with pens, toys, notepads etc to take with them. As they left, Janet Tait, Infection Prevention and Control Nurse Specialist, was lying in wait to demonstrate hand cleaning technique using ‘Glo germ’ to those who wanted to try.

**Evaluation**
So who came? A real mix of ages young and old; some were colleagues with family; some were expatients and interested members of the public; others were students and some were still deciding on career pathways. Overall the event was a resounding success and with very positive feedback. All 112 visitors had been fascinated and enthused by the demonstrations provided by the different laboratories.

Many said they didn’t have long enough and the tour was too short (we reckoned it was better to leave them wanting more). All were glad to have had the opportunity to see the work undertaken behind normally closed doors and many were amazed at how complex it is.

By the end of the afternoon Tracy, Helen and the core team of organisers were on a high, if tired. The lab staff and BMS members taking part in the Open Day had freely given their time on a Saturday to take visitors around and ‘man the benches’. It made us feel good about what we do and it was a privilege showing this to others. We hope it was worth it. We can say that all the team and participants really en-
joyed the day; we found the enthusiasm showed by
our visitors very rewarding and this made all the
hard work worthwhile

“Would you do it again?” I asked Tracy and
Helen. “Er, it was great but…I never thought it
would involve quite so much work!”

The truth is I have now discovered a hidden pool
of fantastic project management talent... There is
also the small matter of two schools to whom we
owe a visit.

So yes, we would do it again (with a bit of arm
twisting), but not every year. We had great support
from the College, a crack team of local organisers
and a fantastic group of willing and enthusiastic
volunteers for the day; without this it would not
have been possible. But the bottom line is, don’t
ever ever underestimate how much preparation an
Open Day requires!

Dr Suzanne Chapman
Consultant Medical Microbiologist
Lead Clinician Pathology

National Pathology Week events in South Tees Hospitals NHS Trust

Time for exercise
Preparations in the James Cook University and
Friarage Hospitals began in September, with some
not-so-gentle exercise. Twenty-four members of the
Pathology Department entered the Middlesbrough
Tees Pride 10K Run to promote National Pathology
Week (NPW). Red T-shirts with ‘Team Pathology’
were worn and over £1,500 was raised for charity.
This got a big ‘splash’ in the press, with some finish-
ing in the top 40 and some in the last five.

Radio interview
NPW began with a ‘straight to air’ outside broad-
cast on the local radio’s Monday breakfast news
programme. The studio presenter advised listeners
to have their breakfast early as they were going over
to the mortuary, live. That gave the interviewer the
opportunity to counter with questions about how
the labs focus on getting people back to health
through the appliance of science. No mention of
Silent Witness.

Science meets art
Art students from Cleveland College of Art and De-
sign were commissioned to produce abstract pieces
of art, after a visit to the labs. A competition was
held and the 24 works of art were exhibited during
the whole of NPW. Colleagues from Pathology, the
Trust Board and a professional artist awarded £100
to the winner, with four runners up winning £75
each. The work was of a high standard, with offers
from staff and the public to buy many of the
exhibits. The common theme that emerged was the
importance of colour in our work.

Over 150 students visited and gained an insight
into the real world of pathology. Careers informa-
tion was provided and ‘pathology clouds’ were
completed by the visiting students (as requested on
the NPW evaluation forms) to capture all the ac-
tivities and skills to be seen in pathology. We now
have a waiting list of school visits.

Over 400 Trust staff visited the labs during NPW.
In the hospital atrium, people from each discipline
staffed displays of our work. Visitors included fellow
health professionals, patients, hospital visitors and
school children. All took an active part. They were
invited to look at slides under microscopes, saw
examples of growth plates used in microbiology
and learnt about hand hygiene. Feedback was very
positive, both from visitors and pathology staff, who
very much enjoyed telling everyone what we do.

A ‘Then and Now’ display was also on show during
NPW, with laboratory equipment from over 50 years
ago, exhibited along with laboratory annual reports
from the start of the NHS. (They showed mostly the
same issues then as now, but without computers!)

The team raised the profile of pathology and
enjoyed every minute.

Dr John Drury
Chief of Service
The James Cook University Hospital
Middlesbrough
Lab tours and Transfusion Awareness Day at Basildon Hospital

At Basildon, hospital Governors had the opportunity to learn about pathology through tours of the laboratories. A Transfusion Awareness Day was also held, giving members of the public the chance to learn about the importance of blood transfusion.

On Friday 7 November, I ran one of the stands for the Transfusion Awareness Day. We had two microscopes showing a film of anaemia and a blood film of leukaemia. We also had demonstrations of how to tell someone’s blood group and a display of how my hospital virtually eliminated unnecessary transfusions. Many of the visitors were interested in the displays and knowing more about the background.

One visitor was there representing the Pernicious Anaemia Society. This is a condition that can be cured quite simply by regular injections of a vitamin. However, he advised me that 20% of patients do not feel cured and many have symptoms that they find disturbing, such as tiredness – not the familiar tiredness, but a “different sort of tiredness”. Some members of the Society have been disappointed with the treatment they have received from their doctors and some have taken to self-medication as a result. We discussed how to investigate the persisting symptoms and agreed on a comprehensive and holistic approach.

This meeting was an interesting reminder that doctors and patients can have different agendas, but for this discussion we agreed on how we could tackle the problem together.

Dr Eric Watts
Department of Haematology
Basildon Hospital

National Pathology Week evaluation summary

The National Pathology Week (NPW) project team would like to thank everyone who returned evaluation forms for their events. Evaluation allows us to assess and improve NPW for organisers, presenters and their audiences. It has enabled us to learn from our successes and mistakes, and make sure the Week will be even better next time.

The 314 organisers who registered an event were sent an evaluation pack containing questionnaires prior to National Pathology Week 2008. From the 320 evaluation packs sent out, 103 organisers, 1032 adult participants, and 569 school students completed and returned questionnaires by 21 November 2008.

Overview of events

Every specialty took part in NPW (see Figure 1). Joint top with clinical biochemistry at 24% were multi-disciplinary events. Indeed, a great deal of team building between scientists and pathologists took place in hospitals across the country. Scientists and trainees were very energetic in their support of the Week, organising fun, interactive events, which very successfully engaged their audience, particularly young people.

NPW was a truly national event and not London-based. Figure 2 indicates that there was a good spread of events across the country, with the greatest number of events in the South East, North West and London.

Organisers were asked to specify which type of audience they targeted for their events. Figure 3 shows an even spread with most of our target audiences. 44% of organisers targeted other healthcare professionals and adults, followed by 43% who targeted sixth formers, and 41% who targeted secondary school students. Comparatively lower were the 16% of organisers who targeted medical students.

Ruth Semple
Evaluation of event support
Organisers were asked about their level of satisfaction for the level of event support. Overall, 90% of organisers were either very happy or fairly happy with the level of support from the College. We specifically asked organisers about their level of satisfaction with the marketing materials and resources that we provided. 90% of organisers were either very happy or fairly happy with them. The main reasons given for dissatisfaction were as follows: the website was not launched early enough, posters and flyers weren’t customisable, the events programme displayed inaccurate information and was not updated regularly enough, and presentations were not available earlier. The project team will endeavour to address these issues for National Pathology Week 2009.

A dedicated website for NPW was created; this was done firstly to promote the Week and its activities to target audiences, and to advise College members of what was happening across the country, how they could become involved in organising an event and also download resources. 79% of organisers were either very satisfied or fairly satisfied with the website. Some organisers felt the website was launched too late so they couldn’t use the resources to plan for their event.

Now that the website has been set up, the NPW project team will develop a section for resources, including event templates and links to other useful websites.

Event success
As a measure of event success, we asked participants to rate different aspects of the events they visited. The events rated extremely highly for all of the different aspects that were evaluated; 92% of people were very satisfied or fairly satisfied overall with the event, with only ‘participation’ scoring lower than the rest. When asked if they would attend another NPW event next year, 77% said they would, 14% were unsure and only 5% said no.

What students found interesting
Students were asked if they learnt anything interesting. Responses included:
- “the importance of pathology and the role it has in healthcare”
- “I didn’t realise there were so many jobs within pathology”
- “pathologists find ways to improve people’s health and lives”.

What students liked the most
Students were also asked what they liked the most. Responses included:
- “I liked the practical experiments”
- “I liked using microscopes and looking at different slides”
- “the most useful thing was having real scientists to talk to”.

What students liked the least
Students were also asked what they liked the least. Responses included:
- “there were too many talks”
- “lack of practical experiments, I would have liked more hands-on stuff”
- “not being able to talk to the pathologists”.

When asked if they would like to attend another NPW event next year, 60% said yes, 32% said they were unsure and only 7% said no. The feedback shows that students prefer hands-on activities and experiments. If more events had an interactive element, it is likely that more students would be enthusiastic. The College hopes to help organisers with this by coordinating science communication training.

80% of organisers felt that their event was either fairly successful or very successful. An overwhelm-
Lessons learnt from National Pathology Week 2008

Last year was the first time that National Pathology Week was held and most organisers developed new events for the occasion. There are many lessons to be learnt from the experience and things that we would do differently for future events. From the feedback received from event organisers, I have put together some of the most useful tips for organising a successful event.

Involve patients
A very good way of maximising interest in and publicity for your event is to involve patients. Real-life stories of how pathology professionals have made a difference to people’s lives are popular with audiences and local media. Building an event around the experience of a patient who is happy to participate, including interviews with the patient and the pathology team behind their care, has proved powerful.

Work with science centres
There are science museums around the country and they will welcome the opportunity to work with you. They do tend to plan their exhibits several months, if not years, in advance, so the sooner you talk to them the better. One advantage of working with science museums is that they take care of advertising events, provide the audience and provide facilities such as cloakrooms, meeting rooms and somewhere for refreshments.

Work with local schools
Pathology has so many links with the national curriculum that teachers and students are usually delighted to attend pathology-related events. Local schools provide a ready-made audience and provide an ideal opportunity to highlight the wide range of career options in pathology. You might invite school groups into your department or take a workshop to the school.
Make it interactive
Feedback from people of all ages is that interactive exhibitions are the most enjoyable. Young people in particular prefer taking part in workshops rather than just sitting through a lecture. Have a look at some of the examples of interactive events in the previous issue of the Bulletin or on the National Pathology Week website (www.nationalpathologyweek.org) to get ideas of how you can involve the audience.

Team working
The most successful and enjoyable events of National Pathology Week involved multidisciplinary and multi-professional teams. Many organisers commented that holding an event was great for team building. So make sure that as many pathology disciplines and as many members of staff as possible are involved in your event. There’s no reason why every member of your department can’t get involved in some way.

Put National Pathology Week on the agenda
Whether it’s the departmental, directorate, Regional Council or Specialty Advisory Committee meetings, putting National Pathology Week as a standing item on the agenda means that progress (or lack of it) will be discussed regularly. This gives everyone the opportunity to be involved and for the work to be shared.

Allow plenty of time for planning
Events can take several months to plan and many organisers commented that they wished they’d started planning earlier. It’s never too early to start – by the time you read this you have only six months to plan your event, so think about starting sooner rather than later.

Specialist societies
If you’re a member of a specialist society, such as the Association for Clinical Biochemistry, Institute of Biomedical Science or Path Soc, think about getting involved in events that they are planning or help coordinate their programme of events locally or nationally. If your society isn’t planning any events, think about setting up a group to develop some.

Don’t reinvent the wheel
Everyone’s very busy with their day job, so don’t make things harder for yourself. Think about repeating a successful event that you’ve held before rather than developing a new one (though of course you’re welcome to develop a new event if you’d like to). Consider using one of the templates that event organisers are providing on the National Pathology Week website to recreate a successful event in your hospital or in a local school, or base your event on one of the PowerPoint presentations that are available to download from the website.

Science Communication Training
If you enjoy working with school children and would like to develop your communication skills, you might consider undertaking further science communication training and becoming involved in the College’s Outreach Programme. For further information, please contact our Outreach Project Manager, Ruth Semple, on ruth.semple@rcpath.org or 020 7451 6753.

Publicise your event
Maximise publicity for your event by working with your Trust’s communications team from the early stages of planning, so that they can coordinate media coverage. Communications teams will be pleased to have the opportunity to publicise positive news stories about your Trust and will have established contacts with the local media. They will also help you publicise National Pathology Week through Trust newsletters or bulletin boards.

Take photographs
As you’ll see from this and the previous issue of the Bulletin, National Pathology Week was a great opportunity to replenish our photo library with images of the public enjoying pathology exhibits. As well as making the reports stand out, good-quality images are also attractive to the media and are more likely to result in your event being publicised. If you have any other photographs that we might be able to use in future promotional material, please send them to Edward Hulme at publications@rcpath.org.

I hope that you find these tips helpful. If you have any other advice, please let us know.

Dr Suzy Lishman
Assistant Registrar
National Pathology Week Lead
National Pathology Week event templates

Did you organise a successful event during National Pathology Week 2008? This is an opportunity to share your experience with colleagues who are planning future public engagement events.

We are building a library of event templates on the National Pathology Week website. These will assist anyone wanting to recreate successful events, either for National Pathology Week 2009 or at any time of year. A blank template is available on the National Pathology Week website (www.nationalpathologyweek.org).

Below is a completed template, based on the autopsy event reported in the January Bulletin (RCPATH Bulletin 2009;145:56–57).

**Dr Suzy Lishman**
Assistant Registrar
National Pathology Week Lead

<table>
<thead>
<tr>
<th>Event title</th>
<th>Autopsy – the final surgical operation. We used the surgical reference because the event was held at the Royal College of Surgeons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venue</td>
<td>McCrae Gallery in Hunterian Museum at the Royal College of Surgeons</td>
</tr>
<tr>
<td>Target audience</td>
<td>General public</td>
</tr>
</tbody>
</table>
| Objectives  | • Understand and value the links between autopsies and medicine, e.g. how autopsies can impact positively on living patients, their role in medical education  
                   • Understand how the cause of death given before autopsy is wrong in a significant number of cases, despite clinicians being confident of their diagnosis  
                   • Raise awareness of pathology’s crucial role in treating and curing disease, e.g. autopsies play a major role in understanding newly diagnosed diseases and are also responsible for the discovery of previously unknown diseases  
                   • Understand how valuable autopsies can be in helping relatives come to terms with their bereavement |
| Age range   | At our event the age ranged from under 10 to over 80, with most being 24–44. It was quite a challenge providing information in a way that everyone could understand. You might want to consider limiting the age range and adapting the event accordingly, e.g. age 8–14, 14–18, over 18s |
| How was the event advertised? | NPW website, through RCS mailshots, posters in Hunterian Museum. We were contacted by several schools and by a lecturer in forensic science – it might be worth targeting similar groups locally |
| Number attending | 30–40                                                                                                                                   |
| Booking required? | Yes, tickets had to be booked in advance (free of charge)                                                                 |
| Length of event | 2 hours                                                                                                                                 |
| Refreshments provided? | No                                                                                                                                 |
| Equipment needed | • Promotional materials supplied by College  
                   • Examination couch  
                   • White sheets  
                   • Water soluble marker pens  
                   • Autopsy instruments (ladle, rib shears, T chisel, mallet, superglue, specimen cassette, forceps, bowel scissors, sponge, cake slice)  
                   • Pots or laminated photographs to demonstrate major organs |
| People needed | • Model to play dead body  
                   • Minimum one pathologist to demonstrate autopsy, ideally two  
                   • Someone on registration desk  
                   • Someone to welcome people to event, distribute and collect evaluation forms |
### Printed material used
- Poster to advertise event
- Pre-event evaluation form
- Autopsy instrument worksheet
- Number labels for autopsy instruments
- Post event evaluation forms
- Consent forms for photographs taken during event

[Links to supporting materials will be provided on the website]

### Room set up
Rectangular room.
Examination couch on one long wall with chairs arranged in semi-circles facing couch. Instruments spread out on tables on three sides of room.

### Event programme
There are three parts:

1. **Welcome and instrument quiz**
   Request to complete pre-event evaluation forms with NPW pencil provided on each seat.
   Description of event.
   15 minutes to handle autopsy instruments and write down what they’re used for on worksheet.

2. **One-hour virtual autopsy**, describing the process, demonstrating instruments at appropriate time, marking major organs and Y incision with marker pens.
   Use pots or photos to demonstrate what each organ looks like, possible showing one normal and one with common pathology.
   Model stood up at the end so that the organs could be demonstrated more clearly.
   Review of instruments and their uses.

3. **Question and answer session** with pathologists.
   Request to complete post-event evaluation form.
   Completed evaluation forms exchanged for a bag containing leaflet, highlighter pen, lanyard and badge on way out.

### Possible variations
Involve mortuary technicians, providing an opportunity to highlight their role in the autopsy.

### What did the audience particularly like?
Being involved – hands-on part with the instruments, being encouraged to ask questions during autopsy demonstration – for this reason I think it works better with a fairly small audience.

### What surprised the audience?
The size and location of some of the organs. The respect and dignity with which an autopsy is performed. How quickly an autopsy can be done.

### What else would the audience have liked?
A chance to see a real autopsy or photographs of one.
More time for questions (we didn’t include a Q&A session but would in future).
Several people requested a handout.

### How much preparation was involved?
Once the idea for the event was formed, there wasn’t much preparation required.
The autopsy instruments had to be photographed, the worksheet designed and evaluation forms printed. Most preparation was last minute – finding an examination couch and sheets and buying marker pens. The two pathologists running the event didn’t meet until half an hour before it started.

### Any other comments?
As the event was so oversubscribed, we emailed everyone one week and again one day before the event to remind them to let us know if they could not attend as there was a long waiting list for places.

### Images
[Links to images from the event, particularly demonstrating room layout, materials used, etc.]

### For more information please contact
[Please provide your name and email address]
Outreach pilot project: evaluation and reflections

Planning and development
Following on from the target-audience research, a small team consisting of Maesha Deheragoda (trainee histopathologist), Emily Dawson (freelance science communicator) and Ruth Semple (Outreach Project Manager) developed a pilot outreach session for Key Stage 5 biology students. Developing the project as a team was a very interesting and rewarding process, and Maesha was crucial to the development and delivery of the project.

We also had feedback from a number of teaching colleagues currently working within secondary schools and science education professionals in the Science and Technology Education Group at Kings College London. This allowed us to test materials as they were being developed and receive insightful and relevant feedback from prospective users.

The pathologists involved were fantastic. Estelle Healy (trainee pathologist) produced the information we needed for the ‘Disease detectives’ game (see below) within a day, Emyr Benbow (histopathologist) and Peter Ward (biomedical scientist) provided the liver slides and Alison Winstanley (histopathologist) supplied the liver images we needed for the support materials. The pathologists provided vital feedback on the materials and the workshop design as it developed.

The research with A-level science teachers told us that they would like their classes to be given a practical challenge that pathologists would face in their work. They were also keen on new and interesting ethical discussions as that forms part of the National Curriculum. The resources were designed with this in mind.

Disease detectives: the liver
This hands-on game was designed to develop students’ practical skills. The activity involves slides with human liver tissue samples in three different states: healthy, liver cancer and cirrhosis. The students were given background information including the role played by pathologists in diagnosing disease, the role of the liver in the human body and a pattern recognition exercise. The game involves three ‘patient case notes’ cards. Each card covers the patient’s medical history. The patients have undergone various liver function tests, resulting in liver tissue being taken for analysis in a hospital pathology lab. The resulting slides have been made, stained and delivered to pathology teams for diagnosis. Each team receives three slides to examine with their microscope and an information sheet covering what the slides should look like. The sheet describes what a slide should look like with normal liver tissue, cancerous liver tissue and liver tissue with cirrhosis. Teams are then asked to match the patients with the slides, using their information sheets, case notes and the expertise of a visiting pathologist. The game is designed to take around 30–45 minutes to complete.

‘Your body, your consent?’ Human Tissue Act discussion
This discussion focused on different aspects of the Human Tissue Act 2004. Eight different discussion cards were developed covering themes of consent, tissue donation, medical research, commercialisation of human tissue, autopsy, legislation and historic perspectives. Students are split into small groups and each group is given two discussion cards to discuss. After this, the students reconvene into a larger group to discuss their thoughts. Each card has been designed to cover multiple themes so that during the large group discussion, which rounds off the whole session, groups have a range of similar and different stimuli to talk through. The cards contain one real main quote on the front, and four related quotes from different perspectives on the back. These different perspectives are taken from a range of sources and are meant to represent different points of view from individuals within the public, pathology or media. They are not representative of whole groups, simply as starting points for discussion.

Delivery
The project was delivered by the three members of the Outreach Pilot Team. We were involved at every stage of the design process and, as a result, there was a strong sense of shared ownership. Delivery went very smoothly, largely due to a great deal of preparation beforehand. The team were able to find time to practice the delivery in advance and talk through the different issues involved. This meant that on the day we were well equipped to respond to the small changes that are always involved in delivering a project in a school setting.

As mentioned above, Maesha Deheragoda, the pathologist on the outreach team, was essential for the delivery of the project. She was excellent with the students, responding positively and encouragingly to questions and their responses. She delivered the liver and ‘Disease detectives’ presentations really effectively, tailoring her language to suit
Patient case note card

A 32 year old overweight female with a history of binge-drinking presents with nausea, fatigue and loss of appetite. She has a family history of liver cancer and has requested liver function tests and blood tests. Blood tests show a raised level of alpha fetoprotein (a protein that sometimes appears when patients have liver cancer, cirrhosis, hepatitis or are pregnant). These proteins are known as tumour markers. Liver function tests have returned within normal levels.

her audience and involving them throughout the presentation, including getting them to come up and point things out on slides, and was constantly encouraging.

Student feedback
Students were able to identify pathology as something they had heard of at the start of the session, relating it to the word *pathos*, to disease, to dead people and to medicine. When asked at the end of the session what they thought about pathology, all the students agreed they knew a lot more, with one male student commenting that before the session he couldn’t have told someone what pathology was, but by the end he felt he could.

Students expressed very positive opinions about all the aspects of the workshop, and even when pressed were unable to make negative comments, but this is to be expected with visiting professionals and their teacher in the room. Students were extremely positive about the discussion and the microscope exercise. Students agreed they would happily take part in a similar workshop again, and felt that the practical hands-on skills development section of the workshop (disease detectives) made them feel confident about working with slides and microscopes. Many of them said they had a lot of fun. Students also reported enjoying the presentation parts of the workshops as much as the activities, group work and discussion.

Teacher feedback
The teacher gave very positive feedback and reported that her students were really engaged with the workshop and had been telling her during the session that they were enjoying it. She highlighted that even some of the students who were usually ‘puddings’ had been really involved in the group work and the activities. She continued to express her appreciation for the pathologist on the outreach team, describing her as really good with the students, encouraging, friendly, helpful and important for the students. She specified that it was particularly valuable that the pathologist was a young woman from a diverse background, and added that having three young women deliver the project rather than older white men in suits was extremely valuable, especially since her students were from diverse backgrounds and the majority were female.

The teacher placed great value on having a pathologist take the time to work with the students. She explicitly mentioned that the expertise of the pathologist would have been really valuable during the discussion session and that it was unfortunate that Maesha was forced to leave the workshop early. She was also keen for students to prepare slides with an animal liver. We had decided against this because of health and safety issues, but she said that they dissect lamb hearts so it wouldn’t be the problem. She also emphasised that having the College Outreach team come to her was far more valuable than taking the students to the College, since this was disruptive for the rest of their day and highly unlikely to be possible, especially with the exam timetables for AS students.

The teacher added that the discussion on the HTA would fit into the ‘citizenship and general studies’ curriculum and this is something she would be keen to offer to students who aren’t studying science at A level, as it is a great way to get them involved with science, and to encourage them to feel positive about it.

Student feedback about the HTA discussion
We told students that we were keen to hear their views on the HTA as this sort of data, if collected from a large sample, would be of interest to policy researchers. This is what they thought.

- Consent was really important to all students and all agreed consent should be sought for use of human tissue
- Students seemed to have difficulty conceiving of pathologists as manipulative or involved in obtaining human tissue for anything other than purposes with good motives, i.e. research. There was no apparent suspicion or negative attitudes towards pathologists in this respect, despite the presentation of the media coverage and legal cases involved in the Alder Hey and Bristol Royal Infirmary human tissue ‘scandals’.
- Students were split over the age at which people ought to be able to take responsibility for giving their own consent. Some felt that the
Scientists in schools

Marilyn Brodie, from the Centre for Science Education, gives an overview of her recent outreach pilot project, which is similar to the College’s own work in pathology. She illustrates that ‘stun and run’ events don’t work, neither does going in and talking about yourself for an hour. What works is finding out what teachers want and developing a relationship with the school.

‘Scientists in Schools’ was a training programme developed for scientists and engineers planning to spend some time in secondary schools in 2008. It was a unique combination of training for AstraZeneca scientists and engineers to spend some time in schools working with teachers and their pupils, and the creation of an online science community.

There were a number of collaborating partners in the programme.

- AstraZeneca was responsible for identifying the scientists and engineers who were already ‘Science and Engineering Ambassadors’.
- The Brightside Trust took responsibility for identifying the schools taking part. The Trust worked with Aim Higher in the Greater Manchester area.

What next?
The Outreach Pilot Team is keen for pathologists to take this event to schools. If you would like to talk about this further, or have any comments or suggestions, please contact me at the email below. If you would like an electronic copy of this resource, get in touch.

Ruth Semple
Outreach Project Manager
ruth.semple@rcpath.org

Emily Dawson
Science Communicator
• Brightside Trust also took responsibility for the development of an online community for science teachers, scientists and engineers (www.thebrightsidetrust.org).
• The Centre for Science Education (www.shu.ac.uk/cse) developed and delivered the training and also further developed the material for use online by both the scientists and teachers.
• AstraZeneca Science Teaching Trust (www.azteachscience.co.uk) provided the funding and will host the teachers’ CPD training materials on their website.

Programme objectives
The aims and objectives of the programme were to:
• make links between the business community (AstraZeneca) and secondary schools
• promote science as a relevant and exciting area of study
• show how science works
• encourage increased take-up of science options and post-16 study
• maintain a long-term relationship with the school and science department
• facilitate scientists on occasions working alongside the science teacher.

During April and May of 2008, 12 AstraZeneca scientists and engineers attended a two-day training programme to prepare them for a day in school. Their training included an outline of the school science curriculum, life in schools today and some ideas for the sort of activity they could take part in while in school. Each scientist had been matched with a school and was asked to make contact before training. Each scientist was also invited to a day’s debrief, which offered them an opportunity to share their experiences and discuss further work with schools and/or the public.

What did they do in school?
• General classroom support. This needs to be carefully managed so that the scientist doesn’t feel like a ‘spare part’.
• Support for investigative work, drawing on the similarities between the scientist’s work and the work that the pupils are doing.
• Demonstrations of techniques, equipment, etc.
• Presentations about their work, making sure they had guidance about the level of technical language. This was often combined with a demonstration.
• Discussions about careers and higher education. This was especially useful where the scientist had a non-traditional background or route through education.
• Organising a work visit
• Extra-curricular activities, e.g. after-school science and engineering clubs, Junior Cafe Scientifique, Royal Society Partnerships Grants, CREST Awards, etc.
• All sorts of other things such as role plays, using video, active writing, etc.

What did we learn?
• Timing. This needs to be flexible, negotiable and agreed between the scientist and the teacher that it could take place any time in the school year.
• A planning meeting is essential for the participants to discuss all their ideas and agree a programme for the visit.
• It does require some time from the host teacher, but it does pay off. As a host teacher said: “I was really pleased...I’ve asked him to come back next year”.

The programme was very successful and all participants seemed to enjoy the experience, with many planning to continue the relationship.

Marilyn Brodie
Operations Director
Centre for Science Education
Sheffield Hallam University
www.shu.ac.uk/cse
The Science and Engineering Ambassadors (SEAs) Programme

Over 20,000 people have already registered as Science and Engineering Ambassadors (SEAs). The programme enables any professional with science, technology, engineering and maths (STEM) skills to work with teachers and young people (ages 5 to 19) in promoting a positive view of STEM, and in demonstrating how essential STEM is throughout every part of the world in which we work.

The occupations of SEAs are very wide ranging, including environmental scientists, civil engineers, marine biologists, medical physicists, apprentices and energy analysts, to name but a few. Anyone who uses STEM in the world of work and who is willing and able to enthuse young people about STEM subjects can be a SEA.

The programme is funded by the Department of Innovation, Universities and Skills (DIUS) and is already supported by employers in every part of the UK who encourage their staff to become SEAs as part of their outreach activities. The SEAs Programme is coordinated nationally by STEMNET and managed locally by a network of SEAs Management contract holders.

The SEAs Programme aims to:
- excite young people about STEM
- give teachers a unique perspective on how the STEM curriculum can be demonstrated in the world of work
- encourage young people to consider STEM careers and qualifications
- contribute to improved academic achievement in STEM subjects
- develop other employability skills like confidence, team work, presentation and creativity.

What types of activities can SEAs do?
The Ambassadors are provided with opportunities that fit their own skills and availability. They include a wide range of activities such as giving careers talks, helping with projects in after-school STEM clubs or challenge days and judging competitions. They also support and inspire teachers in the classroom and help them update their knowledge of contemporary science, technology and research processes. The variety of activities and the impact they have is huge.

Benefits of being a SEA include:
- enjoying a sense of achievement
- gaining a fresh perspective on day-to-day work when seen through the eyes of students
- helping to make a difference in the local community
- developing new skills and confidence.

Read about one Ambassador’s experiences below.

To find out more or to register as a SEA, please visit the STEMNET website: www.stemnet.org.uk

Science really is fun!

When Julie Foster first heard about the Science and Engineering Ambassadors (SEAs) Programme, her main inspiration for getting involved was to demonstrate to young people that science doesn’t have to be a struggle and is actually fun.

“The secret is in how information is presented. Students need to be encouraged to ask questions rather than be intimidated. For example, I found maths a struggle at school, however I use it every day at work now. With real-world application, it becomes less daunting. These are the messages we need to get across. You don’t have to be an A-grade high achiever, just start with the subjects that you enjoy and explore them further.”

Julie is a research scientist at the Institute of Cancer at Barts and the London, Queen Mary’s School of Medicine and Dentistry. She manages the preclinical imaging suite, where they use PET, SPECT, CT, 3D ultrasound, fluorescence and bioluminescent imaging to study cancer development and therapy.

Ambassador work provides an immense amount from a personal growth perspective. Julie has gained confidence in her presentation skills, in
particular. She admits that she had initially found it difficult getting up in front of an audience, no matter their age! Her communication talents have also been tested – clearly explaining her role as a research scientist to young people is a good challenge. Julie’s confidence continues to grow though in these areas and she encourages employers to ‘get staff members out there.’

“I have the opportunity to meet Ambassadors from all different walks of life, which means I get to learn about what’s going on in their fields. This certainly makes me a more rounded individual and a better all-round scientist too.”

Whilst doing Ambassador activities, Julie doesn’t just connect with students and other Ambassadors; she is sometimes able to share her work with a wider audience. At a recent careers fair, Julie had the opportunity to interact with parents.

“There are so many families that have been affected somehow by cancer, so it’s a great opportunity to see behind adverts and for us to show them the research that comes out of their donations.”

Does Julie have any tips for first time SEAs? “Make good use of props and be interactive.” This is often simply a laptop to access the online game she demonstrates and it never fails to have every child engrossed. It isn’t complicated to run through a series of ‘yes’ or ‘no’ questions about how to design your own cure for cancer:

“It always provokes numerous questions, which is the desired effect. As a scientist, it’s important not to hide behind the research you are doing but to present it to as many people as possible.”

**Challenging minds and breaking down myths**

Julie believes that young people face the pressure of having to decide upon how to ‘label’ themselves. The result is students taking decisions about career paths before they even know what it entails or whether they enjoy the relevant subjects.

An Ambassador is there to provoke thought about all the different options. Julie offers specific information on her path but she always tries to encourage an enquiring mind, no matter what the student’s choice.

In terms of science, a big challenge is breaking down the myths amongst young people that science is in the ‘too hard’ category and that scientists are intimidating and unapproachable.

“There is still this legend that scientists are crazy people in white coats! I love animals, enjoy spending time with friends and have a passion for travel – I’m just an everyday, normal person who loves her job in science!”

There is also an undeniable feel-good factor. “I have loved every moment so far. Through after-school and evening activities, the SEAs Programme offers me the flexibility I need to balance work commitments. This means I will have yet more opportunities to spend more time demonstrating that a career as a scientist is one well worth pursuing.”

If you are interested in becoming a Science and Engineering Ambassador (SEA), please visit [www.stemnet.org.uk](http://www.stemnet.org.uk) or call 020 3206 0450.

**Jemeela Quraishi**

Programme Manager

**STEMNET**
A matter of life and death

Ask a random selection of the general public “What do pathologists do?” and ten-to-one the answer will be “cut up bodies”. Few people have any understanding of pathology beyond what they see on television in hugely popular dramas like CSI and Silent Witness. But the description of them as ‘doctors of death’ took on a particularly ugly character during the Alder Hey controversy, when families of children who had died at the hospital learned of the unethical stripping and retention of organs by the maverick Dutch pathologist, Dick van Velzen. Championed by the tabloid press, they turned with fury on pathologists in general. Paediatric pathologists had a particularly hard time; some even received death threats and many dropped out of the profession.

The scandal left me, a journalist specialising in health and science, wondering what kind of people go into pathology and what they actually do. In 2003 I made two programmes for BBC Radio 4 that set out to answer these questions. Then in 2007 the Pathological Society of Great Britain and Ireland approached me. Exasperated by the continuing stigmatisation of pathologists in the public mind as grisly doctors of death, and worried too about the declining status of pathology in the medical curriculum, they wondered if I might consider writing a book along the same lines as the radio programmes. The aim would be to challenge the myths and misunderstandings and raise awareness among the general public of just how important pathologists are in all our lives.

A Matter of Life and Death: Conversations with Pathologists, published in November 2008 by Dundee University Press, is the result – and what a dream assignment it was for a medical journalist! It was a chance to dig deep into the world of medicine, to go behind the scenes and investigate the science that underpins diagnosis and treatment of disease. It was a chance, too, to follow my own personal interests and satisfy my curiosity.

It so happens that I was working as a freelance writer at the World Health Organization (WHO) just after the Centers for Disease Control conference in Atlanta in the early 1980s that explored the new and baffling phenomenon that became known as AIDS, and I was asked to write one of the first articles on the syndrome for WHO. I have stuck with the story ever since, following the virus from southern and East Africa to Thailand, Haiti, Papua New Guinea, Serbia and Scotland for myriad customers including the United Nations. So it was a special pleasure to spend an afternoon with Sebastian Lucas, Professor of Clinical Histopathology at St Thomas’, Kings and Guys Hospitals, hearing his account of his work among people with AIDS in Uganda and Côte d’Ivoire in the mid-1980s and early 90s, when the disease was decimating villages and overwhelming hospitals in Africa, and of his ground-breaking investigations with Kevin de Cock of the link between HIV and tuberculosis.

When I was making the radio programmes, I was loaned some wonderful quirky and thought-provoking books on the pathologist’s world by Francisco Gonzales-Crussi, then Professor of Pathology at Northwestern University Medical School and Head of Laboratories at Children’s Memorial Hospital, Chicago. This was a man I especially wanted to meet, and I spent a fascinating morning in Gonzales-Crussi’s neat living room overlooking Lake Michigan. Surrounded by books and sipping fragrant jasmine tea served by his Chinese-American wife and fellow pathologist, Wei Hsueh, I heard of his upbringing by a widowed mother in great poverty in Mexico City, of his discovery of books and a world beyond the ghetto, and of the charismatic mentors that led him to a career in pathology. Gonzales-Crussi, now retired, went into paediatric pathology in the mid-1960s when it was just beginning to be recognised as a specialty in its own right – children, it was realised, are not just ‘little adults’ and their pathology is distinct.

Having lived and worked in South Africa for seven years from the late 1980s, I was specially interested too to meet Kumarasan Cooper, a South African of Indian descent, now Professor of Pathology at the University of Vermont. He had struggled mightily to find a place in medical school during the apartheid years, and was to become one of the first professors of colour at the University of Witwatersrand in Johannesburg. Once an elite white institution that could choose who it allowed in of the other races, ‘Wits’ had twice refused Cooper a place in medical school, despite the kind of academic performance that later won him a Nuffield Fellowship to Oxford University. There he studied the role of the human papilloma virus in cervical cancer – a disease that was extremely common among women of all ages in his native Natal – for his DPhil.

One good contact led to another, and within six months I had spoken to 23 pathologists in the UK and Europe, America and South Africa – women and men from varied backgrounds and with a great diversity of experience. Dame Julia Polak, one of the longest-known survivors of a heart-lung transplant, told me of her shock at discovering that she was suffering from rare pulmonary hypertension – the very disease that was the focus of her research at the time. The transplant, performed by her friend and research colleague Sir Magdi Yacoub, saved her life and changed her career path. Today, Dame Julia...
is director of the Tissue Engineering and Regenerative Medicine Centre at Imperial College, London.

Irene Scheimberg, who grew up like Julia Polak in Argentina, spoke of having to flee that country in the late 1970s when the military junta began abducting and killing her friends. Now, as Consultant Paediatric and Perinatal Pathologist at Barts and the London Hospital, Scheimberg’s own experience of loss remains a central reference point in her work with families. She and Waney Squier, Consultant Paediatric Neuropathologist at the John Radcliffe Hospital, Oxford, both had fascinating things to say about challenging the dogma of ‘shaken baby syndrome’.

From Jeffery Taubenberger, Senior Investigator in the Laboratory of Infectious Diseases at the National Institute for Allergy and Infectious Diseases, NIH, USA (and a serious musical composer in his spare time), I heard about the search for samples of the Spanish ‘flu virus that caused the devastating pandemic of 1918. And from Juan Rosai of Centro Diagnostico Italiano, author of Guiding the Surgeon’s Hand, I learnt about the history of surgical pathology from its origins among physicians in Renaissance Italy who, curious to see what lay behind the signs and symptoms they had been treating, performed post-mortems on their patients.

These are just some of the characters and themes from a rich collection of conversations that explore not only the individuals’ paths through life and the diseases that have most interested them as pathologists, but how their work on the front line of disease and death has affected their philosophy of life and how they view the prospect of their own demise. For it is these questions, as much as any, that intrigue those of us who prefer not to deal with the reality of death until we have to.

Sue Armstrong
Journalist, Edinburgh

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Sue Armstrong signing copies of her book
A Matter of Life and Death: Conversations with Pathologists during National Pathology Week

Go on, grab a pathologist...

Background
As doctors make up the majority of the membership of The Royal College of Pathologists and are therefore General Medical Council (GMC) members, the mechanism of Fitness to Practise assessments may be of some interest to Bulletin readers. Due to the nature of pathology practice, it is also the case that referrals of pathologists to the GMC are usually made by other pathologists.

Dealing firmly but fairly with doctors whose fitness to practise may be impaired is a statutory function of the GMC. The GMC was one of the first organisations in the world to establish procedures and to develop instruments designed to assess a doctor’s performance. To date, these assessment processes have been used to gather data to help establish whether a doctor is fit to practise in cases where there has been doubt about his or her clinical performance. Fortunately pathologists are referred to the GMC infrequently but, when referred, a pathologist will be investigated and judged against the same standards of Good Medical Practice as any other doctor.

The first GMC assessment was carried out in 1997. The tools the GMC use are recognised internationally as being valid and reliable, and it is clearly important that they continue to remain at the forefront in this field. Meanwhile, the area of medical regulation and assessment of doctors in difficulty has become much more topical following the recent high profile issues reported in the press.

Workplace-based assessment tools
The GMC introduced the concept of workplace-based assessment instruments in its original performance procedures, which came into being more than ten years ago.

It is a term that most pathologists understand as they are working with the new RCPath instruments for assessment of trainee progression. Workplace-based assessment aims to evaluate a doctor’s performance (what he or she actually does in practice) rather than competence (what he or she knows and can do in theory). In the assessment of fitness to practise, the doctor’s performance is assessed at the doctor’s place of work by a process of peer review.

The workplace-based assessment tools that are used in the Fitness to Practise Procedures have undergone constant revision since their introduction, taking into account experience gained from the large number of doctors assessed to date. The National Clinical Assessment Service (NCAS) uses workplace-based assessment tools based on those developed by the GMC, however, their assessments are designed for a different purpose. The NCAS assessment is developmental and designed to formulate an action plan to support the doctor. The GMC assessment team carry out a summative assessment and produce a report expressing an opinion as to whether the doctor is fit to practise.

Objective tests of competence
From the inception of its performance procedures, the GMC has relied on tests of competence, an area which it continues to develop. These tests are an important component of the overall view of the doctor’s knowledge and skills, and allow the GMC Panels to make an informed decision on their fitness to practice.

In pathology, the development of these tests has been a significant challenge as in many disciplines of pathology clinical practice differs significantly from general practice, medical and surgical practice. Also each pathologist referred has a specific and unique area of practice. To ensure that the tests of competence are pertinent to the practice of the referred doctor, the GMC draws on a variety of sources for bespoke test material. A referred doctor is given the opportunity to outline in a specialist portfolio his or her areas of routine practice and the doctor’s own assessment of their level of competence and confidence in these areas. This portfolio then informs the choice of tests to ensure these are a fair reflection of the doctor’s self-declared routine practice.

Tests of competence as discriminating tools
Our tests have gained worldwide recognition as providing “the leading edge of direct assessment of performance”. In her review of these procedures during the Shipman Inquiry, Dame Janet Smith praised the quality of these objective
tests of competence. We are collating data on assessments carried out to date and are building a profile of the problem areas relating to these doctors’ practices.

The usefulness of these tests has been underlined by the fact that we have been able to demonstrate clear differences in the performance of doctors under review when compared with a control group.

**Partnership with the Royal Colleges**

The programme of reviewing the questions and scenarios used in tests of competence is ongoing but has gained momentum. This is a direct result of the willingness of the Medical Royal Colleges to devote the time and expertise of their members to work with the GMC to improve the tests further. So far, the GMC have signed an intellectual property agreement with The Royal Colleges of Surgeons, Physicians, Anaesthetists, Emergency Medicine, Ophthalmology and Psychiatry. The Royal College of GPs have offered to allow us to use whole tests developed by them and discussions are at an advanced stage with most other Colleges.

The data collected is being used for reference in future GMC assessments and we are working closely with The Royal College of Pathologists and its membership in developing the tests in the best way to assess laboratory medical practice.

**Proposals for the development of the tests of competence**

So what of the future in this area? In order to continue to deliver consistency in the standard of assessment across the many changing specialties in medicine, including the increasingly subspecialist field of pathology, the GMC are refining the guidelines for the setting of knowledge and skills tests. While there is a core set of questions relating to the duties of a doctor, adaptable to an assessment in any specialty, there also needs to be a wide range of discipline-specific tests appropriate for evaluating the practice of any pathologists who may be referred.

**Written test of knowledge**

In accordance with the guidance provided by PMETB, “the method of assessment used is selected in the light of the purpose and content of the assessment”. These questions may be written specifically for an assessment, adapted from previous questions or prepared in collaboration with The Royal College of Pathologists. A method for the validation of the answers against a peer group has been developed and will be implemented when there is enough peer validation data to be robust. Peer group validation is now routinely included in the test of competence process for some other specialties (e.g. general practice, emergency medicine, internal medicine).

**Practical skills and clinical method assessment**

For most specialties, practical skills and clinical method are assessed in an OSCE (objective structured clinical examination) test using appropriate anatomical models, mannequins and simulated patients. In our work with the colleges, we are identifying ‘core’ skills such as basic life support that can be used in several different disciplines.

To assess cutting edge medical skills in a rapidly changing health service, there are a variety of assessments using virtual reality and computer assisted programs, which have been developed and assessed for validity, reliability and feasibility within a research setting. The GMC is currently piloting some of these programs to assess whether their inclusion provides a more accurate and representative assessment of each doctor.

Clearly, while some of the clinical scenarios may be relevant to pathologists who see patients, histopathology assessments, for example, need to test the practical skills and clinical methods of macroscopic assessment, microscopy and report writing. In microbiology, clinical method will in-
clude infection control and prevention, both in the headlines currently. In all pathology disciplines the use of additional laboratory investigations (reflex tests) and provision of clinical advice to users of the service are important aspects of practice.

**Communication and consultation skills**
Many doctors referred to the GMC, including pathologists, have problems with communication. All doctors undergoing a performance review are tested on their communication skills using simulated scenarios relevant to their practice. In histopathology, for example, communication may be assessed by looking at competencies in the setting of a multidisciplinary team meeting.

**Patient safety and conclusion**
Patient safety and the standing of the medical profession are dependent on the ability to detect performance problems early. At the forefront of developing assessment tools since 1997, the GMC now has considerable experience in the assessment of doctors who may have performance problems. The role of the Royal Colleges is to set standards for a profession. Together with the Royal Colleges, the regulatory body, the GMC continues to strive to improve the tools and methods in place to minimise the risk to patients from poorly performing doctors. In this way all doctors, including pathologists, can feel assured that their own standards of practice are valued and maintained.

Pathology volunteers will be sought for peer group validation of the GMC tests of competence in the near future. We hope that Fellows of the College will participate in significant numbers to ensure the tests of competence are robustly road tested.

**Professor Jane Dacre**
Physician, Rheumatologist and former Academic Vice-President of The Royal College of Physicians
Director, Division of Medical Education at University College London

**Dr Rachael Liebmann**
Histopathologist, GMC Performance Assessor and Clinical Director
Kent and Medway Pathology Network
GMC Histopathology Tests of Competence Lead

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**How to license a temporary mortuary**

Local authorities are legally required to have emergency plans for disasters, including storing and examining dead bodies. Following a recent mass fatality exercise, Professor Guy Rutty outlines the practicalities involved in setting up a temporary mortuary and emphasises the need to plan ahead.

Under the Civil Contingency Act, there is a requirement that local authorities have plans in place to deal with the event of a disaster and that these plans are exercised. This includes the provision of facilities for the storage and examination of the dead. One is discouraged from utilising purpose-built hospital mortuaries in these circumstances, as this would affect the function of hospitals which may have enough problems already dealing with the injured, so resilience groups base their contingency plans on the use of temporary mortuaries. Such mortuaries can range from a variety of permanent buildings to tented facilities such as the national emergency mortuary.

Prior to 2006, it was possible to undertake an autopsy examination virtually anywhere that the pathologist chose to, with the exception of premises licensed to sell alcohol. Thus on occasion, under specific circumstances, non-mass fatality autopsies have been performed in funeral parlours, residential properties and even fields. After the commencement of the Human Tissue Act 2004 in September 2006, it became a legal requirement enforced by the Human Tissue Authority (HTA) that premises where autopsies take place are licensed. Hospital and public mortuaries immediately went through the process of HTA licensing, providing information about their governance arrangements, their premises and their compliance with a range of standards in order to demonstrate suitability and secure a licence offer. However, compliance with the standards rightly precludes the use of some of the facilities mentioned earlier. It also presents new challenges to all those involved in disaster management, who will need to demonstrate that arrangements for the provision of temporary mortuary facilities are suitable and of the standard required by the HTA.

The following brief guide is designed to assist those who are involved in contingency planning. It is based on the experience of the national contaminated mass fatality pathology response team – ‘the ologists’ (pathologists, anatomical pathology technologists [AFTs], odontologists, radiologists...
and radiographers), as they are referred to by the emergency services. Through its training, mortuary design and practical application during Operation Torch, the largest multi-agency, multi-national European Commission (EC)-funded contaminated and conventional mass fatality exercise to have occurred to date in the UK (London, October 2008), the team remains unique in its collaboration with the HTA to test out the temporary mortuary licensing process from start to finish.

The process
The key to obtaining a licence for your temporary mortuary is forward planning. You need to anticipate the need for the use of a temporary mortuary and make some key decisions now about where the mortuary is to be sited, its structure, the operational processes and the personnel that are going to work within it. In addition, you need to place all these considerations in the context of the HTA standards for emergency mortuaries, which have been developed by the HTA in collaboration with the Home Office, disaster victim identification experts and pathologists involved in mass fatality planning.

The first thing to appreciate is that in designing a temporary mortuary, one is simply replicating the processes that would occur within a permanent mortuary, but in a facility that will operate for a short period of time for a specific incident at an unconventional site. Although this may be, for example, within a tented facility, the components and processes common to all mortuaries should be present, including body reception, storage and examination areas along with offices and viewing areas and the infrastructure that supports the mortuary’s primary functions, i.e. water, power, drainage and communications. Thus resilience planners will identify appropriate facilities within a given local authority area or consider the use of temporary buildings/tents. Plans can then be drawn up in preparation for an incident as to the interior layout of the facility and amenities that are required to enable it to function. These can be provided as architectural plans within resilience documents and exercised by setting up the facility and running a mock incident. It is critical that plans are drawn up with the pathology team that will operate the mortuary. If they are left to the police or local authority personnel, who will have little, if any, understanding or experience in designing or working within an actual mortuary, there is a risk that the facility will not meet the standards required by the HTA and that the offer of a licence will be delayed as a result.

In planning for your emergency mortuary, it is useful to understand the legal context and in particular the licensing requirements imposed by the Human Tissue Act. Whatever the circumstances, autopsies can only take place on licensed premises. The Act imposes some statutory requirements on all licences. They must show the premises where the licensed activities take place, they must state the name of the Licence Holder and they must identify the Designated Individual (DI), the person under whose supervision the licensed activities are undertaken. Finally, they must have been acknowledged by both the Licence Holder and the DI. Prior to granting a licence, the HTA must assure itself of
the suitability of the licence holder and the DI, and also of the premises and the practices taking place. The HTA standards and the licence application process have been developed to this end and the same steps are required whether you are applying for a licence for a permanent mortuary or a temporary facility following a mass fatality incident, for example a tent that could operate in the middle of Oxford Street (see Figure 1).

Licence holders
So, to get the process underway you need to first decide who will be the licence holder. In the case of a hospital mortuary, this is likely to be the ‘corporate body’, the NHS Trust, represented by the Chief Executive or other senior officer. In the case of a temporary mortuary, the licence holder could be the local government authority or, in certain circumstances, the Home Office. The licence holder has two main responsibilities: to ensure that there is a suitable Designated Individual in place and to pay the licence fee. On this latter matter, the fee is not charged until a licence is required, so it is possible to prepare fully for the application for a licence and to test out emergency plans without incurring any fee charged by the HTA.

Designated individuals
Next, you need to identify the DI (Designated Individual, not detective inspector; beware of the use of acronyms with multiple meanings in mass fatality incidents). In the case of a temporary mortuary this should preferably be the senior pathologist although it could be a senior APT with mortuary management experience. It is the author’s view that it should not be a police officer; the so-called police ‘mortuary manager’ will be put into the mortuary by the police to ensure police governance, not to act as a mortuary manager as pathologists understand the term.

Resilience groups should be taking action now to identify suitable trained individuals within their local authority area who could take on the role of DI. These individuals should be involved in the resilience planning and be fully acquainted with the temporary mortuary plans. Most importantly, they should be reviewing the plans against the HTA standards, taking action where they indicate that the emergency facility would fail to meet the standards. The HTA compliance report should be completed in readiness for a licence application and guidance is available on the HTA website to help with this task (www.hta.gov.uk).

The DI must have undergone training by the HTA, and the HTA recommends that anyone who is identified as potentially taking on this responsibility should participate in its on-line training programme for Designated Individuals as soon as possible. In the case of ‘the ologists’, it was decided that all the pathologists on the team should attend HTA training, so that in the event of multiple incidents the pathologists can operate multiple temporary mortuaries in different locations all at the same time, which is in line with current government resilience planning requirements. (Note that while a common mortuary plan may be applied to several locations, they are treated as separate facilities by the HTA and will all require separate licences.) Assigning the role of DI to a pathologist also maintains overall medical governance within a temporary facility at the time of a disaster. If you wish to go further in your preparations, then the DI could undergo police Bronze and Silver commander training (using the standard emergency services command structure of Gold, Silver and Bronze, i.e. strategic, tactical and operational command). Again this is the approach that ‘the ologists’ have taken.

Preparations
Once identified, the DI has two choices: to wait until the disaster occurs and then begin the process of filling in the compliance report for assessment by the HTA or, more sensibly, to anticipate the requirement for the use of the mortuary and to prepare fully in advance so that the minimum amount of work is needed to complete the application.

Completing the report is not a difficult task as long as the DI is fully acquainted with the mortuary plans and processes, although to complete it thoroughly may take several hours. This assumes that the DI is a lead pathologist, who will often be a forensic pathologist, and that they are acquainted with this process. This may not be the case as few such individuals have any direct involvement in the licensing of the premises that they work in. As with a permanent mortuary, they will have to demonstrate that the layout, function and processes are all in place to enable the respectful professional handling, examination and release of the dead. They will also have to demonstrate that risk assessments have taken place, that health and safety standards are met and that there are sound systems of governance, including those relating to incident monitoring, administration, record-keeping, communication and personnel. All personnel must be trained to work in such a facility. In the case of a hospital mortuary this is easy as personnel are limited to pathologists and APTs. However, when a mortuary may involve police, fire and rescue, HART (Hazardous Area Response Team, i.e. ambulance) and military personnel, this becomes more difficult, although with the recent training of the National Disaster Victim Identification (UK-DVI) response teams for both conventional and contaminated fatalities, this should not be a problem (www.ukdvi.org).

The ‘ologists’ have opted to pre-plan and have exercised the entire process in anticipation of the requirement to activate a licence in relation to their temporary mortuary requirements. The HTA has endorsed this approach and participated fully
in the exercise, testing its own procedures for assessing the application for an emergency mortuary licence and granting a licence.

The incident itself
Thus the incident occurs. The response starts and on the instruction of HM Coroner and in consultation with a number of key personnel it is agreed that a temporary mortuary is required. The DI, no matter which choice they made above, must kick-off the licensing process.

The first thing they should do is contact the HTA to inform them of the incident and of the need for a licence. (Out of hours, emergency numbers are available for this purpose; DIs should have the HTA contact numbers readily to hand, although they are available on their website: www.hta.gov.uk.) On receipt of this notification, the HTA will assign a lead inspector who will liaise with the DI and inform them of the process for evaluating the application and granting the licence. A support inspection will also be assigned. In the meantime, construction of the mortuary can begin. Where there is doubt about who should be the DI, the HTA will provide advice and help identify the most suitable person.

As already mentioned, the DI should have completed the HTA's compliance report as part of the ongoing planning for a mass-fatality incident, so providing it to the HTA should be a simple matter. Because speed is of the essence in these situations, the HTA recommends that inspectors meet with the DI, the Licence Holder and other members of the emergency planning team if required, to talk through the compliance report and provide any advice and guidance about the HTA standards or the licensing framework. The contents of the compliance report will be used to guide the interview and questions will be asked on any aspect of concern or requiring clarification. The inspectors may wish to see key pieces of documentation, for example risk assessments or selected standard operating procedures (SOPs) – in any event, they will want assurance that licensable activities and associated working practices are subject to strict governance arrangements. Once again, pre-planning is the key as SOPs must be in place in advance for all aspects of the function of the mortuary in order to demonstrate to the HTA that staff working in the mortuary are aware of them and will follow them.

HTA response
The HTA is able to provide an on-site response within 24 hours of notification of the event. Providing that the compliance report contains all the necessary information and that the evidence provided demonstrates compliance with the HTA standards, the licence will be granted immediately and autopsy work can begin. The DI becomes legally responsible for the licensable activities that take place within the mortuary and should at all times be aware of everything that is being undertaken by ‘the ologists’, the police or any other personnel. This is why we recommend that the DI should sit within the on-site multi-agency Silver command group.

Where considered necessary, the inspection team will visit the mortuary to inspect the facility, although in the case of ‘the ology’ team, where working on site is restricted to those who have undergone specialist so-called ‘hot-zone’ protective equipment training, a site visit would not be permitted. For this reason, the HTA has undertaken a pre-inspection of the chemical, biological, radiological and nuclear (CBRN) emergency mortuary and, when testing the process, the interview with the DI was held at a remote safe site.

The HTA’s intention is to issue licences within the first few hours of the incident and prior to the facility becoming operational for any necessary autopsy activity, but without delaying non-invasive identification operations.

Summary
Thus in the case of a temporary mortuary, the key is pre-planning by emergency planning teams and early identification, where possible of the person who will take on the responsibility of Designated Individual. The DI will have to undertake a considerable amount of work in the planning stages to ensure the swift and effective execution of the HTA licensing process. The task will be greater for those who have several temporary mortuary sites located throughout a large geographical area, as is usual for resilience groups. Each one will need to go through this process although generic principles, e.g. the use of UK-DVI trained police personnel will make this easier.

It is a time-consuming process but, if used to inform emergency plans, it will be a helpful and beneficial one. So, I would advise all those involved in disaster planning that preparation is crucial. All but the final step of applying for the licence can be done in advance of the actual requirement to activate a temporary mortuary. And, as the HTA standards impose nothing more than the professionals working in this field would expect, they provide a useful template and checking mechanism for emergency plans.

Professor Guy N Rutty
Chief Pathologist
East Midlands Forensic Pathology Unit
University of Leicester

Acknowledgments
I wish to thank Caroline Browne of the HTA for assisting in the preparation of this manuscript and for working with the national contaminated mass fatality response team to ensure that they are as prepared as they can be for a real licence application. I also thank Dr Chapman, HM Coroner for Nottingham and Chair of the East Midlands Resilience Forum, for assisting in the preparation of this manuscript.
Choosing histopathology as a future career

It is always gratifying to find out that a junior doctor has decided that pathology is the place for them. What is puzzling, given the lack of pathology exposure at many medical schools these days, is how such a doctor would think of the idea at all. Here Ana-Maria Avram tells us what made her take the plunge.

Perhaps the most challenging decision of our medical career is the choice of specialty. Some of us are lucky enough to have had everything figured out even before medical school, but others, including myself, spend long hours trying to decide which one of the so many medical fields would be the one for us. There are a lot of factors to take into consideration when making such an important decision, but something most of us find useful at such time are recommendations from others who went through the same struggle, at some point in their careers.

Step 1: Consider histopathology as a possible choice

I started work as a Foundation Year 1 (F1) doctor last year, with absolutely no idea of what medical specialty I wanted for the future. I was hoping my vocation would become clearer with time. I did surgery and medicine, and even though I learnt a lot, met very nice people and had a very pleasant working environment, I did not enjoy what I was doing. I used to joke and say that the moment I went into work on a Monday morning feeling happy, I would know that I had found the right job!

Everything was in total confusion and I was starting to get really worried, until I came across histopathology during my haematology placement. I was able to perform bone marrow biopsies and then go to the pathology laboratory to look at the slides with the registrar or consultant. I began to enjoy doing this type of work much more than the previous parts of my F1 rotation. In fact, during any multidisciplinary team meeting, I was more interested in what the pathologist was describing than in what the surgeon had to say. I realised then that pathology was definitely a choice to consider.

Step 2: Try a histopathology taster

Gathering information about histopathology was my next goal, followed by organising an ‘embedded taster’ in a histopathology department during my Foundation Year 2 (F2) rotation. For those who might not know, a ‘taster’ is a short experience in a specialty that is not covered in any previous rotation and is available to any F2 doctor who needs help in deciding their future career. I have to say that this was probably the best experience I had during my Foundation programme, since it strengthened my desire to become a histopathologist.

One of the main things I found encouraging was that all five histopathologists in the department seemed to be very happy. They all told me that they love what they do and could not see themselves doing anything else. This, you have to agree, is not always the case in medicine or surgery, where you so often meet senior colleagues who seem very unhappy with their daily work, moaning all the time about the problems in the system. The general atmosphere in the department made me have that nice feeling of belonging to a team, which I missed so much in my other rotations. And as a bonus, there was music playing on the radio in the post-mortem room and in some of the pathologists’ offices!

During my ten days in the histopathology department, I was able to experience most of the work of a general histopathologist. In the mornings, I observed post-mortem examinations and was given the chance to touch and feel the organs and tissues. I learned a lot from the final clinicopathological correlation after each post mortem, which helped me to understand the various disease processes. In the afternoons, I took part in doing small and large ‘cut-ups’. All surgical specimens (biopsies, resections, excisions, etc.) are sent to the pathology laboratory to be examined, cut up, embedded in paraffin, sliced and stained. The next step is analysing what the sections show microscopically, which was my favourite part. Most of the microscopes were connected to a teaching head, camera and a computer, so that you could see the image on the screen and discuss it with the consultant at the same time. At first, everything was just pretty pink-and-blue pictures and I could not differentiate at all between different tissues, but soon I got better at it and it felt great!
The histopathology training programme in the UK

During this period, I read about pathology on different UK websites (see below) and discussed the various training opportunities with the pathology registrar. I found out that histopathology is a five-year run-through programme that starts after completing the two Foundation years satisfactorily. There is an assessment after the first year and, if the trainee can demonstrate the necessary aptitude for this job, there is an almost guaranteed training placement for Years 2–5. You can choose to sub-specialise in cytopathology, forensic pathology, paediatric pathology or neuropathology along the way after completion of the second year. I found it refreshing to note that there is a large variety of sub-specialties (at least 18) available to choose from. Over the year, up to 25% of the working week is devoted to programmed teaching, a much higher proportion than in most other clinical specialties. Consultants deliver the majority of teaching.

Step 3: Decision time!

I think the most important thing when deciding on a medical specialty is to be honest with yourself and to evaluate your aptitude, interests and future career opportunities. What I want is something intellectually challenging, and histopathology is certainly that. I want structure and order in my daily work. And I also want reasonable working hours and a good lifestyle. I definitely want a family some day, and histopathology is suitable for part-time working. In histopathology, your days will be busy but, apart from some rare exceptions, there are no weekend duties, ‘on calls’ or night shifts involved.

As great as histopathology might sound so far, it will not be the right decision for everyone. Although I feel I made the right choice, there are two aspects that I struggled with. One is the view held by some people that pathologists are weird people and their main work involves dealing with dead bodies, spending all their time underground in some dark smelly lab and possessing no social skills to interact with anything living. Even some doctors, in their ignorance, share this opinion. Fortunately, these views do not surface very often, and most of the time the pathologists have the respect of their colleagues. Contrary to what some people believe, as a histopathologist one has to interact with many people on a daily bases (colleagues, laboratory staff, other doctors at multidisciplinary team meetings, patients’ families inquiring about a post mortem, attend inquests at the coroner’s court and dealing with patients at fine needle aspiration clinics). Having good communication skills is, in fact, vital.

Second, in pathology there is loss of the instant gratification of saving someone’s life. One will almost never get thank-you notes from patients for diagnosing a certain difficult case of cancer correctly. However, I hope receiving thanks was never a reason for any of us to choose a career in medicine!

To conclude, my advice to anyone considering histopathology would be to be honest with themselves regarding their expectations for the future, get information from as many people as possible (stories from people who opted against histopathology would also be useful) and give it a try, preferably as a taster during the F2 year.

If you like it, congratulations on finding the right job. If not, keep looking.

Best of luck to everybody!

Ana-Maria Avram
F2 doctor, Histopathology

Useful websites
I have always been fascinated by the magical world of microscopic pathology. The artistic patterns and the ever-changing geometric and geographic formations, enhanced by various special stains and immunohistochemical stains, have always given me hours of pleasure. My artistic eyes see landscapes, modern art, floral designs and a fantasy world down the microscope. That probably explains why I feel invigorated by reporting thousands of histology/cytology slides! I have never complained of being bored or exhausted even after reporting large volumes of work in my very busy district general hospital for many years, even when until recently there were severe staff shortages. Hunting for the acid fast bacilli in a Ziehl-Neelsen stain provides calmness to my eyes!

Since childhood I have always been interested in various art forms, including music, painting and fabric work. The idea to marry two of the many passions in my life, fabric art and histopathology, came to fruition recently and the result is 'Beauty under the microscope', a series of fabric collages based on microscopic images. These colourful and bright fabric collages are produced on stretched canvas using layers of thousands of recycled fabric remnants. Fabric collage is relatively unknown in the UK and I believe I am the pioneer in developing a new technique for fabric collages (non-sew) and probably the first artist (in the world?) to use this art form in microscopic pathology. My non-medical paintings and fabric collages have featured in local exhibitions, including Bolton Central Art Gallery and The Royal Bolton Hospital. I have raised a substantial amount of money for charity by selling greeting cards made from prints of my work. I am now exhibiting my series of fabric collages 'Beauty under the microscope' at the Medical Art Society (MAS) art exhibition, being held from 19 March to 19 April 2009 in ARTSHED, is Hertfordshire's newest contemporary art venue, at the picturesque Westmill Farm, Ware (www.artshedarts.co.uk). This is MAS's 73rd art exhibition. Incidentally previous MAS exhibitions were held in The Royal College of Pathologists in 1996 and 1997.

MAS was founded in 1935 and is an independent, apolitical organisation. It has about 230 members who are practising, trainee or retired medical, dental or veterinary professionals. Besides the annual exhibition, various other MAS events are organised. MAS promotes interest in and the pursuit of painting, graphic and sculptural art. It is administered by the Royal Society of Medicine, but there is no need to join the RSM, though you must be a doctor, dentist or vet. MAS welcomes new members (email MAS@rsm.ac.uk).

Apart from their work and family, doctors need something else to relax and lead a fulfilling life. Indulging in creative pursuits provides an ideal way to achieve both.

Dr Aruna Mene
Consultant Histopathologist
Royal Blackburn Hospital
East Lancashire Trust
Welcome to our new Press and Communications Manager: Samantha Jayaram

My name is Samantha Jayaram and I joined the College in December 2008 as the Press and Communications Manager. One of my key roles is to develop media relations on behalf of the College; not just ensuring we are able to respond to the negative press stories that can occasionally arise regarding professional error or malpractice but also to be proactive in promoting the vital and diverse role of pathology in everyday health care.

Most members of the public believe that pathology is solely related to cutting up dead bodies. Making the public and even other health professionals aware of the wide impact of pathology isn’t always easy, given the popular view of pathology represented on television in programmes such as *CSI* and *Silent Witness*. The good news is that we can get this message across as there is a genuine interest from the public in pathology. The positive feedback from the 320 events that were held during National Pathology Week last year is testament to that.

**Why is being ready to talk to the press important?**

One early November morning a few years ago at a well known acute London Trust, the press officer was sitting at her desk getting on with the business of the day when her phone rang – it was *The Sun*’s newsdesk: ‘What did she know about the ceiling collapsing in at the Trust’s A&E? Were there any casualties? Would the A&E department be able to continue to take patients? Did the ceiling collapse due to negligence by the Trust?’ This call was the first time the Trust’s press officer had heard about the incident and as you can imagine she was fairly alarmed. But as all press officers are duty bound to do, she kept her composure and without giving away the fact that she had no idea what the journalist was referring to, she promised to get back to the journalist within their ten minute deadline to confirm or clarify details of his story.

It transpired that three ceiling tiles had indeed fallen down in the waiting area of A&E, causing mild consternation and even milder damage. However, when this incident started, a patient called *The Sun*’s newsdesk thinking they were onto a big news story. The end result was the press officer was able to get back to the journalist (within their deadline) with the prosaic truth and the story was of course dropped.

This did happen to a colleague of mine and whilst there wasn’t a disaster for the press to cover, the main point of the story is that the media will latch onto an incident often before you are even aware of it, especially if it involves catastrophe or scandal. How quickly you are able to respond and get your message across is critical in how you or your organisation will be portrayed in the press – because if you aren’t ready the press will just go ahead and create their own version of events.

**We are all journalists**

In 2009 this is more relevant than ever before. How we find out what’s going on in our world is expanding exponentially with 24 hour news, free newspapers, cable TV channels and digital radio stations. Add to this the emerging trend of the role of the citizen as journalist – we blog, upload our photos and video clips to the world wide web, socialise with people we barely know via our PCs through sites such as Facebook and My Space and send tweets, texts, emails – it’s no wonder that news travels faster than ever before. The good news is this media proliferation gives us more opportunities to communicate our message but we need to make sure that we are responsive and proactive to make the most of these opportunities.

**I need your help**

And this is where you can come in. I am building up a database of members who would be interested in becoming media spokespeople on behalf of their specialty for the College. Especially people who are interested in promoting what their work entails to the press and the public, not only on an ongoing basis but particularly around key dates such as National Pathology Week.

The kind of press enqiry you would most likely be asked to respond to would be a topical medical or science story where the press need expert commentary. This could be for TV or radio but more likely to be for a national newspaper or news website. One
Vacancies for College Directors
The following College appointments will become vacant on 18 November 2009:
- Director of Conferences and Academic Activities (currently Dr Kevin West)
- Director of Communications (currently Professor Carrock Sewell)
- Director of Research (currently Professor Phil Quirke)
- A new post of Website Advisor has also been created.

Application forms, job descriptions and person specifications are available on the website at our new ‘Get involved’ webpage: www.rcpath.org/index.asp?PageID=1585.

Vacancy for Honorary Librarian
A successor to Dr Peter Goddard is also required. This post would suit a retired Fellow with a special interest in books. A job description and details of how to apply are available on the website at www.rcpath.org/index.asp?PageID=1585.

The closing date for all posts is Friday 8 May 2009.

BMS Specimen Dissection
The College is seeking to make appointments to the RCPath/IBMS Conjoint Board that oversees the development of training portfolios and examines for the Diploma in Extended Dissection Practice. Consultant pathologists who have experience in postgraduate education and assessment and/or who have experience of training biomedical scientists are encouraged to apply. These appointments will replace current members of the Board who are leaving in the next 12 months. Applications including a short curriculum vitae and a statement outlining the reasons for interest in this work should be sent to: Charlotte Balazs, charlotte.balazs@rcpath.org by Friday 24 April 2009.

New College awards
In order to increase College recognition of and support for pathology research, College Council has agreed that pathology trainees who excel in research will be invited to apply for a set of new College Research Medals. The precise criteria for assessment and route for application will be announced in due course, but the intention is that the medals will be awarded at the Annual General Meeting of the College in November, and the new medal-holders will be invited as guests of honour at the subsequent College Dinner. Further information will be published by bulk email, on the College website and in the next edition of the Bulletin.

It is not always easy for the College to communicate with trainees who are not yet Fellows of the College, so if you are supervising an able trainee in a relevant research project it would be helpful if you would bring this development to their attention.

Following on the success of National Pathology Week, there is also a proposal to create an award to recognise outstanding and sustained effort in communicating pathology to non-pathologists. Further information will be published in due course.
In the October 2008 issue of the Bulletin we offered an added incentive to complete your details on the Workforce Database: £100 of Marks & Spencer vouchers to one lucky person selected at random whose details were entered on the database by 31 December 2008. The winner was Dr William Candlish of the Royal Alexandra Hospital, Paisley. Professor Stewart Fleming presented Dr Candlish with his vouchers in February 2009.

Please visit the Workforce database at www.canceruk.net/rcpworkforce.htm to update your records. You will need your existing College website username and password. If you need a username and password, please press ‘Register’ on the College homepage. (NB Changes of address should still also be notified to membership@rcpath.org). For assistance, contact the Database Helpdesk on 0870 840 8033 (open 9am – 5pm Monday to Friday).

Electronic workforce database

- While it is great to have been able to offer a token incentive to update ones data as above, this process takes only about a minute and is most worthwhile for pathology as a whole.
- The updated record count is 1738; over double the number in early January. Out of 7000 records, this is 25%.
- This is encouraging progress, but we need to approximate to 100% of records updated for our data to be credible.
- The database is less of a chore in the long term than the annual censuses which it replaces, and good workforce data is essential if the College is to do a worthwhile job in contributing to national pathology workforce planning in this era of likely change.
- We anticipate the launch of the employers’ section on 4 April at the same time as the specialty specific modules for cytopathology and microbiology/virology go live
- Completion of the employers’ section will prove a burden for Clinical Directors, but in return they will gain the ability to download their own directorate’s workforce data, which can be used to answer queries from others, and the reassurance that by declaring their established posts, to be linked at the College to the data on the individual post-holders, they will have contributed towards the very best workforce planning initiative, which should help to protect their service from the workforce supply/demand misalignments from which they have suffered in recent years.

Electronic workforce database

- The add-on modules in cytopathology and microbiology/virology allow respondents to contribute to in-depth studies of the current workforce issues specific to their specialty. They naturally require respondents to update their basic data before they complete them.

Professor Tim Stephenson
Director of Workforce Planning
Meet the College IT team!

David Howe, IT Manager
David joined the College in February 2008. His main role is to align the resources of the IT Department with the requirements of the College and improve the clarity of IT’s role.

Best part of the job
Completing a project that meets its objectives, on time and within budget. Working with colleagues in other disciplines to make use of IT to achieve their objectives.

Upcoming projects
Replacement of College database, implement recommendations of external IT Audit Review.

Top IT tip for members
 Frequently and regularly save your work and make sure you have a backup/copy.

David.Howe@rcpath.org

Eben Hugo, Website & IT Officer
Eben joined the College in 2004. His main role as webmaster for the College is to keep the website updated. Eben also works on IT projects, especially in a project management capacity.

Best part of the job
The thrill of reacting quickly to events as they unfold, and also to meet the changing expectations of our members over a longer period. Our members’ views are very important and are always highly appreciated.

Upcoming projects
The redevelopment of the five year old College website, the replacement of the College network and server infrastructure.

Top IT tip for members
If you have any queries about the College website, or if you need a reminder of your College logon details, I can email or give you these details over the telephone.

Eben.Hugo@rcpath.org

Dasharet Palushi, IT Officer
Dash joined the College in August 2007. His main role is ensuring high availability of network services, providing third line technical support and recommending implementation of new systems or upgrades of current systems.

Best part of the job
Ensuring the College has the IT systems to work efficiently and that the College takes advantage of new technologies.

Upcoming projects
Wireless Project for covering the Education Centre as well as the College is in its final completion stage. Upgrading the computer systems of the college network.

Top IT tip for members
Do not use the same password for all your banking or email accounts. Never disclose personal information over the phone.

Dasharet.Palushi@rcpath.org

Ryan Nelson, IT Officer
Ryan joined the College in October 2008. Being the newest IT member, his job as first-line support is to be the face of the IT department dealing with website and IT support.

Best part of the job
Being part of a charity that serves society. Helping people, problem solving and improving my skills.

Top IT tip for members
Know your software as most problems have simple solutions. Always remember to press Ctrl + Alt + Del when leaving your PC to lock it.

Ryan.Nelson@rcpath.org
Volume of blood provided for blood culture audit

**Rationale for doing this audit**
There is plenty of research about optimal volume of blood to send for culture if infection is suspected; the more blood cultured, the higher the pick-up rate. There is also research about the blood to broth ratio used for culture, as reflected in the manufacturer’s recommendations. I previously carried out a similar audit in another hospital and found the volume of blood provided for blood culture was less than the manufacturer’s recommended amount. It was decided to see if this was also the case in University Hospital of Wales, Cardiff, and whether the results of the cultures were affected by the volume of blood.

The blood culture system used is the BacTec system. The manufacturer recommends that 8–10 ml blood is provided per bottle. Volumes as low as 3 ml can be used but recovery will be less. The vacuum in the blood culture bottles usually exceeds 10 ml and the volume should be monitored using the 5 ml graduation marks (the bottle needs to be vertical).

There are risks associated with providing too little blood:
- increased chance of false negatives as probability of encountering a colony forming unit is less
- enough blood is needed to neutralise the anticoagulant sodium polyanetholsulfonate (SPS), as SPS is toxic to some organisms, e.g. *Haemophilus*
- 5–10 ml is needed for standard aerobic and anaerobic bottles and 8–10 ml is needed for plus-aerobic and plus-anaerobic bottles
- if less than 3 ml of blood is used, there will not be enough growth factors present for some fastidious organisms, e.g. *Haemophilus*
- less blood may lead to slower detection.

There are also risks associated with providing too much blood:
- increase chance of false positives
- risk of blood coagulation due to excessive neutralisation of SPS; this can lead to false-negatives if the organisms are included in a clot, as CO2 release is slower or insufficient to be detected within 5 days
- there is less dilution of any antibiotics or natural inhibitory substances present in blood
- too much blood can be dangerous both to patients (risk of bottle contents refluxing into vein) and to staff (risk of blood spray if forcing excess blood into bottles).

**Aim and objectives**
The aim was to find out what volumes of blood are being provided for culture in blood culture bottles. The objectives were:
- to measure the volume of blood provided for culture in blood culture bottles from the medical admissions ward
- to compare differences in blood volume between positive and negative blood cultures
- to compare differences in blood volume between significant and contaminated positive blood cultures.

**Standards**
The manufacturer recommends that 8–10 ml blood is provided per bottle, but that volumes as low as 3 ml can be used with lower recovery. We would aim for 100% of the bottles sent for blood culture to contain 3–10 ml of blood, and that at least 80% contain 8–10 ml.

**Method – sample size and selection**
This audit was carried out on the Medical Admissions Ward as many of the blood cultures are taken from patients here, and it was logistically easier to concentrate on one ward. 911 blood culture bottles were included, between May and October 2007.

**Method – data collection**
Blood culture bottles were weighed and marked with their weight before being taken to the Medical Admissions Ward. The bottles were used and proc-
essed as normal. After processing in the laboratory, the bottles were kept to one side, with positives and negatives stored separately. The bottles were weighed again and the pre- and post-filling weight recorded. Corrections were made for the loss of the cap, blood used in processing of positive bottles and the specific gravity of blood. The volume of blood added to each bottle was calculated. Positive cultures were called ‘contaminated positives’ if the patient was not clinically considered to be infected with the organism grown. Usually this organism was a coagulase negative staphylococcus. Other positive cultures were considered significant.

Results
Of the 911 blood culture bottles analysed, 836 (91.8%) were culture negative, 53 (5.8%) were culture positive and considered significant, and 22 (2.4%) were culture positive and considered contaminants. Results are shown in Figure 1.

Of all the bottles (911) analysed, only 97 (10.7%) contained the manufacturer’s recommended volume of 8–10 ml of blood. 131 (14.4%) bottles contained more blood than recommended. 166 (18.2%) bottles contained less than 3 ml of blood. 517 (56.7%) bottles contained 3–8 ml, which the manufacturer states can be used but with lower recovery of organisms. This information is shown in Figure 2.

The volume of blood provided ranged from 0.3 ml to 23.1 ml per bottle. The variation in volume of blood provided is shown in Figure 3. The results grouped by volume of blood provided are shown in Figure 4.

Conclusion
• Only 67.4% of bottles contain 3–10 ml of blood, which is much lower than the 100% we are aiming for. Only 10.7% of bottles provide the ideal volume of blood (8–10 ml), compared with the 80% we would like to aim for. This means there is increased chance of false negative results and there could be a danger to patients and staff.
• There does not seem to be much difference in volume provided between positive and negative cultures
• There were more contaminated positives when lower volumes of blood were provided.

Recommendations for improvement
To decrease the risk of false negatives and to improve safety, we need to aim to have all blood cul-
Culture bottles returned to the laboratory with 3–10 ml of blood, and to increase the number of bottles returned with 8–10 ml, as recommended by the manufacturer. In order to achieve this, the action plan shown in Figure 5 has been implemented.

Progress on the action plan is reviewed at quarterly microbiology audit meetings. Dr Howe is overseeing the implementation of the action plan.

Re-audit

This audit should be repeated after implementation of all the action points. The aim is to re-audit at the start of 2010.

Dr Joanna Hargreaves
Specialist Registrar in Medical Microbiology
University Hospital of Wales, Cardiff

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Action</th>
<th>Responsibility</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inform clinicians about the recommended volume of blood to provide for blood culture</td>
<td>Audit findings to be reported to the clinicians, at an audit meeting</td>
<td>Dr J Hargreaves and Consultant Dr R Howe</td>
<td>14 October 2008</td>
</tr>
<tr>
<td>Inform the staff taking blood cultures about the recommended volume of blood to provide</td>
<td>Information to be put in the Pathology Users Guide</td>
<td>Laboratory Manager and Consultant Dr R Howe</td>
<td>October 2008</td>
</tr>
<tr>
<td>Inform the staff taking blood cultures about the recommended volume of blood to provide</td>
<td>Information to be put in the bag with the blood culture bottles</td>
<td>Laboratory Manager</td>
<td>February 2008</td>
</tr>
<tr>
<td>Inform the manufacturer of the volumes of blood we are receiving and that the graded marks on the bottles only work if the bottle is vertical.</td>
<td>Results to be fed back to Bactec manufacturers</td>
<td>Consultant Dr R Howe</td>
<td>May 2008</td>
</tr>
<tr>
<td>Inform the staff taking blood cultures about the recommended volume of blood to provide</td>
<td>Information to be provided for phlebotomist training</td>
<td>Laboratory Manager and Consultant Dr R Howe</td>
<td>October 2008</td>
</tr>
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</table>
Audit of NICE guidelines for tuberculosis: laboratory diagnosis and infection control aspects

Introduction
About 8000 new cases of tuberculosis (TB) are currently reported each year in the United Kingdom. The incidence, however, varies in different regions of the country. For instance, in the North West of England, the rate is 10.3 per 100 000 population compared to 44.8 per 100 000 in the London area. Microbiology laboratories across the UK play a crucial role in providing a service which aids in the prompt diagnosis and subsequent management of TB cases. The service also extends into the realm of TB prevention and control in hospitals. The National Institute for Health and Clinical Excellence (NICE) issued the guidance, Tuberculosis: Clinical diagnosis and management of tuberculosis, and measures for its prevention and control (Clinical guideline 33) in March 2006. This document outlined recommendations covering different aspects in the management of such cases including laboratory diagnosis and infection prevention and control in the hospital settings.

Aims and objectives
To assess compliance of microbiology laboratories /hospitals in the Merseyside, Lancashire and Cumbria regions, with the NICE guidelines for tuberculosis.

Methods
- The audit was conducted during July and August 2008.
- Fifteen laboratories involved in the Mersey Deanery, Lancashire and Cumbria, medical microbiologists audit group were included.
- Questionnaires were sent out to the laboratories electronically. Multiple answers were acceptable for some of the questions.
- As some of the laboratories referred their specimens to a regional laboratory, questions were designed to ascertain their referring criteria, if any. Aspects covered included:
  - laboratory diagnosis
  - molecular diagnosis
  - infection prevention and control
  - diagnosis of latent tuberculosis.

Standards
Tuberculosis: Clinical diagnosis and management of tuberculosis, and measures for its prevention and control (Clinical guideline 33), 2006.

Results:
- Total number of laboratories in the region= 15.
- Number of responses received = 13
- Findings are presented in relation to each NICE recommendation (given in italics).

I. Laboratory diagnosis:
1. Recommended samples to be sent for diagnosing respiratory/non-respiratory TB

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Sputum, BAL, induced sputum, gastric washings</td>
</tr>
<tr>
<td>Lymph node</td>
<td>Biopsy, aspirate</td>
</tr>
<tr>
<td>Bone/joint</td>
<td>Biopsy/paraspinal abscess pus, joint fluid</td>
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<tr>
<td>GIT</td>
<td>Biopsy, ascitic fluid</td>
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<td>Genito-urinary</td>
<td>EMU, biopsy, endometrial curettings</td>
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<tr>
<td>Disseminated</td>
<td>BAL, liver biopsy, bone marrow, blood</td>
</tr>
<tr>
<td>CNS</td>
<td>CSF, biopsy</td>
</tr>
</tbody>
</table>

BAL = bronchoalveolar lavage, EMU = early morning urine, CSF = cerebrospinal fluid

Findings

<table>
<thead>
<tr>
<th>Samples received by laboratories</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectorated sample</td>
<td>13</td>
</tr>
<tr>
<td>EMU</td>
<td>12</td>
</tr>
<tr>
<td>Tissues/aspirates</td>
<td>12</td>
</tr>
<tr>
<td>BAL</td>
<td>11</td>
</tr>
<tr>
<td>Induced sputa</td>
<td>8</td>
</tr>
<tr>
<td>Autopsy samples</td>
<td>8</td>
</tr>
<tr>
<td>Gastric washings</td>
<td>6</td>
</tr>
<tr>
<td>Faeces</td>
<td>4</td>
</tr>
<tr>
<td>Others: bone marrow, blood</td>
<td>2</td>
</tr>
</tbody>
</table>

2. Multiple sputum samples (at least three, with one early morning sample) should be sent for TB microscopy and culture before starting treatment, if possible, or failing that within seven days of starting treatment.
Findings

3. Microbiology staff should perform TB culture on the following samples (even when not requested for).
   - Lymph node (LN) biopsy/aspirates
   - Pleural biopsy
   - Any surgical sample sent for routine culture
   - Any radiological sample sent for routine culture
   - Histology sample
   - Aspirates from any site
   - Autopsy sample

4. Clinical samples should ideally be sent for culture by automated liquid methods, bearing in mind that laboratories need a certain level of throughput to maintain quality control.

II. Molecular diagnosis

1. Rapid diagnostic tests for Mycobacterium tuberculosis (MTB complex) on primary specimens should be used only if
   - rapid confirmation of TB diagnosis in a sputum-positive person would alter care
   - before conducting a contact tracing exercise.

II. Molecular diagnosis

1. Rapid diagnostic tests for Mycobacterium tuberculosis (MTB complex) on primary specimens should be used only if
   - rapid confirmation of TB diagnosis in a sputum-positive person would alter care
   - before conducting a contact tracing exercise.

   2. If Multi-drug resistant TB (MDR-TB) is suspected, rapid diagnostic tests should be conducted for Rifampicin resistance.

Findings

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three sputa, before start of treatment</td>
<td>10</td>
</tr>
<tr>
<td>Three sputa within seven days of start of treatment</td>
<td>1</td>
</tr>
<tr>
<td>Rarely receive three samples</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Samples processed for TB routinely</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LN biopsy/LN aspirate</td>
<td>6</td>
</tr>
<tr>
<td>Pleural biopsy</td>
<td>5</td>
</tr>
<tr>
<td>BAL</td>
<td>0</td>
</tr>
<tr>
<td>Any radiological sample</td>
<td>0</td>
</tr>
<tr>
<td>Sample sent for histology</td>
<td>0</td>
</tr>
<tr>
<td>Aspirates from sterile sites</td>
<td>0</td>
</tr>
<tr>
<td>Any surgical sample</td>
<td>0</td>
</tr>
<tr>
<td>Autopsy samples</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systems used for culture by regional referral labs</th>
<th>n = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated liquid systems</td>
<td>3</td>
</tr>
<tr>
<td>Lowenstein-Jensen (LJ) medium + automated liquid systems</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situations when molecular testing is carried out</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before conducting a contact tracing exercise</td>
<td>6</td>
</tr>
<tr>
<td>If confirmation by such means would alter patient care</td>
<td>6</td>
</tr>
<tr>
<td>Routinely on all smear positive specimens</td>
<td>4</td>
</tr>
<tr>
<td>Smear negative cases, if high index of suspicion</td>
<td>2</td>
</tr>
<tr>
<td>On formalinised, smear positive biopsy specimens (but no sample has been received for culture)</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Rapid diagnostic tests for MTB complex should be conducted on biopsy material, only if all the sample has been formalinised AND AFB are visible on microscopy.

<table>
<thead>
<tr>
<th>Molecular testing for Rifampicin resistance</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only if risk assessment suggests possibility of Rifampicin resistance</td>
<td>7</td>
</tr>
<tr>
<td>For infection control purpose</td>
<td>2</td>
</tr>
<tr>
<td>Routinely on all smear positive cases</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rapid diagnostic tests on biopsy material</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>If samples is unsuitable (e.g. formalinised) for culture</td>
<td>5</td>
</tr>
<tr>
<td>High index of suspicion but smear is negative</td>
<td>4</td>
</tr>
<tr>
<td>Only if smear is positive</td>
<td>1</td>
</tr>
<tr>
<td>After clinical discussion</td>
<td>1</td>
</tr>
</tbody>
</table>

III. Prevention and control in hospital settings

1. If admitted to hospital, patients with suspected respiratory TB should be given a single room.

Findings

<table>
<thead>
<tr>
<th>Admission of suspected respiratory TB cases to single rooms</th>
<th>Number of hospitals (n = 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>Sometimes</td>
<td>1*</td>
</tr>
</tbody>
</table>

*Recommended in Trust policy for TB, but not implemented occasionally.
2. Patients with respiratory TB should be separated from immunocompromised patients, either by admission to a single room on a separate ward or to a negative pressure room on the same ward. Smear-positive TB patients should be cared for in a single room, until they have completed two weeks of the standard recommended regimen or are discharged from hospital.

Findings

<table>
<thead>
<tr>
<th>Isolation of smear positive TB patients into negative pressure room</th>
<th>Number of hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>If risk assessment suggests possibility of MDR TB</td>
<td>5</td>
</tr>
<tr>
<td>If the patient is HIV positive</td>
<td>5</td>
</tr>
<tr>
<td>Always, until patient is 2 weeks into therapy</td>
<td>3</td>
</tr>
<tr>
<td>The ward has HIV or other immunocompromised patients</td>
<td>2</td>
</tr>
<tr>
<td>Not available locally</td>
<td>5</td>
</tr>
</tbody>
</table>

3. Healthcare workers (HCWs) caring for patients with TB should not use masks, gowns or barrier nursing techniques unless MDR-TB is suspected or aerosol generating procedures are being performed.

Findings

<table>
<thead>
<tr>
<th>Use of FFP3 masks by HCWs</th>
<th>Number of hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>If MDR TB is suspected</td>
<td>11</td>
</tr>
<tr>
<td>When aerosol-generating procedures are being performed</td>
<td>7</td>
</tr>
<tr>
<td>If intensive one-to-one care is administered</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use of gowns by HCWs</th>
<th>Number of hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>When aerosol-generating procedures are being performed</td>
<td>8</td>
</tr>
<tr>
<td>If MDR TB is suspected</td>
<td>5</td>
</tr>
<tr>
<td>Routinely in all cases throughout hospital stay</td>
<td>2</td>
</tr>
</tbody>
</table>

4. In-patients with smear-positive respiratory TB should be asked to wear a surgical mask whenever they leave their room until they have had two weeks of treatment.

Findings

<table>
<thead>
<tr>
<th>Use of surgical masks by patients</th>
<th>Number of hospitals (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>6*</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
</tr>
</tbody>
</table>

*depending on risk assessment

IV. Diagnosis of latent TB

1. Mantoux testing should be performed.
2. Interferon-gamma (IFN-γ) tests, if available, should be considered for those in whom Mantoux testing is positive or is less reliable.

Findings

<table>
<thead>
<tr>
<th>Type of tests</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mantoux test</td>
<td>7</td>
</tr>
<tr>
<td>Quantiferon test</td>
<td>7</td>
</tr>
<tr>
<td>T-spot test</td>
<td>2</td>
</tr>
<tr>
<td>Mantoux and IFN-γ tests</td>
<td>5*</td>
</tr>
</tbody>
</table>

*when chemoprophylaxis is indicated

<table>
<thead>
<tr>
<th>Situations where IFN-γ tests are recommended or performed</th>
<th>Number of labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>As evidence of exposure during a contact tracing exercise</td>
<td>7</td>
</tr>
<tr>
<td>Diagnose latent TB in HCWs</td>
<td>6</td>
</tr>
<tr>
<td>To rule out active TB as a possibility in smear negative cases</td>
<td>2</td>
</tr>
<tr>
<td>To diagnose current active TB in smear negative cases</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>*</td>
</tr>
</tbody>
</table>

*Immunocompromised children, prior to start of immunosuppressive therapy, diagnose latent TB in immigrants.

Summary and recommendations

1. Lab diagnosis
   a. Good compliance overall, with receipt of respiratory samples.
   b. Only 46% of the labs cultured lymph nodes aspirates/biopsies and 38% of the labs cultured pleural biopsies for TB routinely. None of the other recommended types of samples were routinely processed for mycobacterial cultures, by any of the labs.
   c. 92% of labs received early morning urine (EMU), which is recommended in renal TB only, which in itself is a rare condition.
   d. 30% of labs still accepted faeces samples for culture of Mycobacteria that is considered of no value in diagnosis of intestinal TB.
   e. 100% (5 of 5) of (referral) labs that performed culture on samples from across the regions used automated liquid culture systems. Two labs used LJ media, in addition.

Agreed actions

1. Change in local protocols so that all samples of faeces are rejected and to process only those samples of EMU where renal TB is a definite consideration or after clinical discussion.
2. NICE recommends all samples of tissues/biopsies/aspirates be processed for TB. This was deemed impractical as the incidence of TB in the region was relatively low. Moreover, incor-
poration of this recommendation into local protocols would increase the workload of the TB laboratories unnecessarily. It was decided that clinical discussion would be the best approach in such situations to ascertain need for mycobacterial culture.

II. Molecular diagnosis
a. 46% of the labs followed NICE guidance with respect to molecular testing on primary specimens.

b. Of these, 4 labs further tested all smear positive specimens, by molecular means.

Agreed actions:
The criteria for molecular testing should not be limited to those outlined in the document. The cost notwithstanding, the availability of molecular methods in the region has allowed for testing majority of the smear culture positive samples. In view of the local patient demographics and regional epidemiology of mycobacterial infections, this has proved extremely useful, from both the hospital infection control and the public health perspectives. A locally approved protocol would however, enable prudent use of resources. It was also suggested that greater dialogue with histopathologists would ensure that samples which are smear-positive on histopathology examination, would be referred for molecular testing, without delay.

III. Infection control in hospital settings
a. 92% of the hospitals complied with single room requirements for suspected respiratory TB patients.

b. 100% compliance with respect to use of negative pressure rooms in specific situations.

c. Variable use of PPE and gowns existed among the hospitals: In 2 hospitals, HCWs used them when caring for all smear positive cases. Compliance was 85% for use of masks and 38% for use of gowns by HCWs when caring for suspected MDR TB patients and only 50% for usage of masks and 61% for gowns during aerosol generating procedures.

d. 46% hospitals did not routinely advise their patients to use masks when they leave their hospital rooms during the first two weeks of anti-tuberculous therapy.

Agreed action
Re-examine local hospital policies and re-education of staff concerned. The confusion with regards to use of masks and gowns in different situations could be best avoided by advocating use of personal protective equipment by HCWs when caring for all cases of respiratory TB, irrespective of risk assessment for MDR-TB.

IV. Diagnosis of latent tuberculosis
a. Increasing trend for the use of IFN-γ for a variety of situations.

b. 2 hospitals use it for diagnosis of active tuberculosis.

Agreed actions
NICE guidelines have considered the role of IFN-γ assays in the diagnosis of latent TB and have suggested its potential role in ruling out mycobacterial infection. Recent interim HPA guidance has also outlined certain situations when these assays can be performed, including diagnosis of active TB in exceptional circumstances. Hence, it was agreed that, in addition to having a regional centre, locally approved protocols would help streamline requests for IFN-γ testing, effecting better use of resources.

Conclusion
There is variable compliance with the NICE guidelines in the region. The only area where serious non-compliance was noted was in infection prevention and control of TB in hospitals, which will be addressed locally in each trust. The implementation will occur as soon as possible and will be undertaken by the respective Infection control teams. With respect to lab diagnosis including use of IFN-γ assays and molecular diagnostics, the protocols of testing have been adapted to suit the region, taking into account the incidence and prevalence of TB. However, there is need for optimum utilisation of resources and it was agreed that a locally approved protocol and a centralised service would be a best way forward, although a timescale would be difficult to predict. A re-audit has been planned in a year’s time unless an update to the guidelines is issued earlier.

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Consultant Medical Microbiologist

Dr John G Cunniffe
Consultant Medical Microbiologist
Wirral University Teaching Hospital NHS Foundation Trust

References
2. NICE Clinical guidelines 33: Clinical diagnosis and management of Tuberculosis, and measures for its prevention and control, 2006.
**Introduction**

The vision for pathology set out in the ‘Second Phase’ Carter Report (the Carter Report), apart from giving an overwhelming sense of *déjà vu*, is largely incontestable. Its emphasis on putting patients first, by providing services which are clinically excellent, responsive to users, cost effective and integrated with other elements of the Government’s health reform strategy, has been broadly welcomed by professional bodies and the Department of Health (DH). However, there are issues in the Carter recommendations surrounding the use of standards and accreditation in the ‘regulation’ of medical laboratories that in their lack of clarity give rise to serious concern.

**The international model**

There already exists an ‘international model’ of proven value, which invokes the use of ISO standards in the accreditation and regulation of testing/calibration laboratories, and is increasingly being applied to medical laboratories worldwide. The model illustrated in Figure 1 and described below, has three elements and five stages (A-E). It is used in this article as a basis against which the Carter recommendations and the DH response can be evaluated.

The first element is an internationally recognised standard that can be used by a medical laboratory for ‘self-assessment’ and in preparation for assessment by an accreditation body (Stage A) and additionally by an accreditation body to make an objective assessment of a laboratory (Stage B).

The second element is an independent and internationally recognised accreditation body that assesses the medical laboratory and, if the laboratory is working in conformity to the standard, grants accreditation (Stage C). If this is the end point of the model, the process is termed ‘voluntary accreditation’.

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The third element is a government or a designated regulator that mandates accreditation to a chosen standard, as part of its regulatory framework for medical laboratories (Stage D).

The fourth element is an internationally recognised accreditation body informing government or a designated regulator of the accreditation status of the medical laboratory (Stage E).

**Figure 1**

International model for standards, accreditation and regulation

- Internationally recognised standard
  - (A) Used by a laboratory for self assessment (and in preparation for assessment by an accreditation body)
  - (B) Used by the accreditation body to make an objective assessment of a laboratory

- Internationally recognised accreditation body
  - (C) Accreditation body assesses the laboratory and grants accreditation if it is in compliance with the chosen standard. Voluntary accreditation
  - (D) Government or a designated regulator mandates accreditation to a chosen standard, as part of its regulatory framework for medical laboratories

- Regulation by government
  - (E) Accreditation body informs government or a designated regulator of the accreditation status of the medical laboratory
The third element is regulation by government. This is where Government or a designated regulator mandates accreditation to a chosen standard, as part of its regulatory framework for laboratories (Stage D). Finally the accreditation body informs Government or the designated regulator of the accreditation status of a laboratory to provide evidence of fulfilment of the regulatory requirement (Stage E). This is often called ‘mandatory accreditation’, but it is important to recognise, it is government that ‘mandates’ accreditation not the accreditation body.

Whilst the individual elements of the model are interdependent, it is at its best when the elements function independently. In other words those who write standards, those that accredit and those that regulate have defined and independent roles. When this is so it provides the opportunity for government to set regulatory requirements, (which might include a requirement for a laboratory to operate in conformity with the International Standard3, ISO 151894), and at the same time remain at arms length from the assessment/accreditation process. In countries where there is no government regulation it may still be explicit or implicit that medical laboratories be accredited in order, for example, to obtain contracts for the provision of services.

The contribution of CPA (UK) Ltd
As the Carter recommendations concerning standards and accreditation, ‘primarily represent a criticism of the current system of pathology laboratory accreditation, supplied by Clinical Pathology Accreditation UK Ltd (CPA) since 19925; it is important in the context of this article to recognise the success of the professional bodies in creating CPA and to reiterate its achievements in:

- Writing standards that sought to be ‘unequivocally verifiable at an assessment visit’. These standards, based on an integration of existing International Standards, have been reviewed, and revised as appropriate, on an annual basis6
- Creating a voluntary accreditation system in which arguably more laboratories have participated than in any other European country
- Encouraging laboratories to use the standards as a tool for self assessment and thereby; increasing awareness of the value of managing quality, using resources effectively, maintaining staff competence, planning pre examination, examination and post examination processes to meet the needs of users and evaluating all aspect of laboratory activity to ensure the quality of results and service to users by a continual improvement process.

These achievements have been recognised internationally, and have been influential in creating an interest in standards and accreditation in many parts of the world, including the Caribbean, Italy, Hungary and Ireland.

Recommendations of the ‘Second Phase’ Carter Report
The first three recommendations set out below reflect, albeit rather imprecisely, the requirements of the ‘international model’.

1. Objective and measurable quality standards should be developed for pathology services, from sample request to delivery of interpreted result
2. The accreditation process should be reviewed so that it inspects against the quality standards (once developed) referred to in Recommendation 1
3. Pathology service providers – and, in future, consolidated networks – should be subject to mandatory accreditation by an organisation independent of the providers and the professions

The discussion that follows will examine the role of regulation, how accreditation can support regulation and finally, the most crucial element, the choice of standards or standards.

Regulation and accreditation
It is clear that Carter requires the accreditation process to be reviewed and furthermore that pathology service providers should be subject to mandatory accreditation by an organisation independent of the providers and professions. Unfortunately, past pronouncements by the DH, in 1997, obliging ‘all laboratories participating in cervical screening to obtain accreditation’7 and in 2003-2004 by the four UK Health Departments requiring all NHS pathology laboratories to be registered or enrolled for accreditation8 have, to the author’s knowledge, never been enforced. This lack of enforcement sends out a very confused message and provides no incentive for laboratories to register.

The DH in its responses9 to Carter’s second and third recommendations indicates ‘the potential inclusion of pathology services in services to be registered by the new regulator, the Care Quality Commission (CQC)’, which is to replace Commissions for Healthcare, Social Care and Mental Health. It is clear from the CQC website that its role as the regulator will include enforcement, and that it may also inspect or assess against standards. This latter role is akin to that of an accreditation body.

However, the response of the DH suggests that it does not see CQC acting as an accreditation body in that it supports ‘the further development of the existing voluntary pathology accreditation system’ and ‘any moves by CPA to merge or otherwise integrate with the United Kingdom Accreditation Service (UKAS).’ The importance of the relationship between CPA and UKAS (however it may be resolved) is that UKAS is recognised by Government as the National Accreditation Body and is confirmed in that role under the new EC Regulation 765/08, which establishes a legal framework for accreditation in the European Economic Area. A similar situation to that of the UKAS/CPA part-
nerness has recently been successfully negotiated in The Netherlands where Coordinatie Commissie voor Kwaliteitsbewaking in Laboratoria in de gezondheidszorg (CCKLTest), the equivalent of CPA has joined forces with Raad voor Accreditatie (RvA) the equivalent of UKAS.

It seems highly likely, that in future, the regulator of pathology services will be the CQC. This in itself may not be a problem but if it also becomes the assessing or inspection body, then accreditation ceases to be independent of regulation. This difficulty is overcome however if the CQC employs UKAS/CPA to conduct assessments and grant accreditation. This arrangement has a number of very important advantages:

- Regulatory bodies such as the CQC tend to come and go whereas UKAS/CPA is here to stay
- The combined experience of CPA and UKAS, which is irreplaceable, will be preserved
- UKAS as a full member of the European Laboratory Accreditation Co-operation (EA) and International Laboratory Accreditation Co-operation (ILAC) has to operate in conformity with ISO 17011 and is periodically peer reviewed by one or both of these organisations as being in conformity with the Standard
- Both the DH’s requirement for ‘further development of the existing voluntary pathology system’ and the Carter recommendation for ‘accreditation by an organisation independent of the providers and the professions’ are met
- Depending on the standards used (see below), accreditation granted by UKAS will be recognised not only throughout Europe but also throughout the world.

If a laboratory fails to achieve accreditation it will be the regulator CQC, hopefully in consultation with the professions, which will decide on the enforcement action to be taken and not the accreditation body. It is imperative to the success of any enforcement policy that the time limits put on rectifying non-conformities found during the assessment process are clearly established. Failure to do this will devalue the whole accreditation process.

Standards

The final crucial issue is what standards should be used in the accreditation of medical laboratories. It is in this area where the Carter recommendations and the DH response are most confusing and potentially damaging. The difficulty arises in the use of the term ‘quality standards’ (Recommendation 1). It is unclear what the Carter report regards as ‘quality standards’ except that they should be ‘objective and measurable’ and ‘be developed for Pathology services from sample request to the delivery of interpreted result’.

The situation is further compounded by Carter’s failure to fully understand which standards are used to accredit medical laboratories in Australia, as highlighted in paragraph 35 of the first Carter report which states that, ‘minimum standards are set by the National Pathology Accreditation Advisory Council (NPAAC); and the National Association of Testing Authorities (NATA) accredits in accordance with those standards, using an assessment process based on peer review...’. This is incorrect, NATA accredits using three sources of information; firstly ISO 15189 (AS 4633, the Australian version), secondly ‘The Supplementary Requirements (or Field Application Document) - a feature of all of NATA’s fields of testing and thirdly, as indicated by Carter, against requirements set by NPAAC. The Supplementary Requirements provide interpretation of the ISO Standard, in the Australian context, and additional requirements, usually of a technical nature which have been agreed by to the professional societies and the Accreditation Advisory committee of NATA.

It is incomprehensible that neither the first or second Carter report mentions the International Standard for medical laboratories, ISO 15189, nevertheless the DH response does recognise that the CPA Standards ‘incorporates ISO 15189’. Increasingly, for Governments and medical laboratories world-wide and particularly in Europe, ISO 15189 is the standard ‘for use by medical laboratories in developing their quality management systems and in assessing their competence’. It is also recognised by the European Laboratory Accreditation Co-operation (EA) and by International Laboratory Accreditation Cooperation (ILAC), both bodies of which UKAS is a full member, as the Standard ‘for use by accreditation bodies in confirming or recognising the competence of medical laboratories’. Although at present CPA assesses against the CPA Standards there will be a point in the development of the UKAS-CPA partnership where migration from these standards to ISO 15189 becomes inevitable. To use ISO 15189 as the primary standard for accreditation purposes is to:

- Enjoin UK medical laboratories with those in Europe and the rest of the world
- Value a standard that not only sets out the technical requirements for management of resources and pre examination, examination and post examination processes but also forms a basis for managing quality that embraces a philosophy of evaluation and continual improvement.
- Recognise those professional bodies and laboratories that have voluntary worked to achieve the high standards that have ensured that our medical laboratories deliver high quality of results and service to users.
- Accept, as part of the continual improvement process, the setting in conjunction with professions, of ‘quality standards’ or additional requirements as demonstrated by the NPAAC approach.
- Be prepared for the possibility of a European Directive, in the interests of the health and safety
of its citizens, which seeks to regulate medical laboratories in a similar manner to the so-called Blood and Tissue Directives.

Recommending ISO 15189 as the primary standard for accreditation should not be interpreted as an unwillingness to embrace Carter’s first recommendation and although the Carter report was incorrect regarding the primary standard used by NATA it stumbled upon ‘the jewel in crown’ of the Australian system, that of the role of NPAAC12. It advises the Commonwealth, state and territory health ministers on matters relating to the accreditation of pathology laboratories and is responsible for the development and maintenance of standards and guidelines for pathology practices.

There still remains the need to address the concerns of Carter, the DH and the important recommendations in the Darzi report, Chapter 4 ‘Quality at the heart of everything we do’13 regarding the establishment of national metrics (quality indicators or metrics) combined with the setting of local quality metrics. In order to address this, the author proposes that the four professional bodies (currently shareholders of CPA) establish a joint working party to examine the issues involved in establishing ‘quality standards, indicators and metrics’ and supplementary guidelines such as those prepared by NPAAC; this with the objective of establishing a similar organisation in conjunction with the DH.

In summary, having the CQC as the regulator, UKAS/CPA as the accrediting body, ISO 15189 as the primary Standard and a joint working party to study the issue of quality standards, fulfils the criteria of the international model (Figure 1) and the recommendations of Carter and Darzi and establishes a firm basis for the further development of medical laboratory services post Carter.

Dr David Burnett
retired NHS Clinical Biochemist

References and notes
7. EL(97)83, Cervical screening programme – achieving quality standards in laboratories, 1997, NHS Executive, UK.
9. www.cqc.org.uk
10. ISO/IEC 17011 Conformity assessment – General requirements for accrediting bodies accrediting conformity assessment bodies. (NOTE with respect to this Standard a medical laboratory is categorised as a conformity assessment body).
11. Personal communication from Megan Nelson, Medical Testing Manager, NATA.
Time for diagnostic molecular histopathology and cytology at the College

It seems that histopathology is getting involved with more and more molecular diagnostic techniques. How can the average laboratory keep up with these developments? Manuel Salto-Tellez makes an impassioned plea for molecular pathology to be put on a sound basis at the core of the routine diagnostic process.

Histomorphology and immunohistochemistry, the pillars of traditional pathology, are (and will always be) the first step for the diagnosis, prognostication and therapeutic decision-making of diseases. Because of this, pathology became the core of modern medicine since the mid-20th century. In parallel, the last 60 years have witnessed the introduction of molecular biology in the way we deliver healthcare, from the discovery of DNA to the development of molecular medicine involving clinical practice as a whole. This has a fundamental impact in the way we practise pathology. And yet, the level of involvement of histopathology departments in molecular diagnostics is still a matter of controversy among pathologists.

A restrictive way of understanding diagnostic pathology would be to advocate that anything which is not purely morphology-based (so-called ‘molecular stuff’) should not be in the realm of histopathology. Some, with a slightly less restrictive view, would argue that pathology departments would need to be involved only in those tests that are directly used to help histopathologists in the diagnosis of diseases such as lymphoma or sarcoma translocations, or T-cell and IgH receptor gene rearrangements. A minority would be of the opinion that simple molecular tests – which are carried out on tissues and are leading to the diagnosis of inherited diseases like microsatellite instability or BRAF gene mutation analysis in colorectal cancer – are also part and parcel of the routine diagnostic endeavour. Only a few seem to agree that molecular tests used to decide on therapeutic intervention – of the likes of EGFR mutations in lung cancer or KRAS gene mutations in colorectal cancer – should be in our diagnostic armamentarium.

In relation to the techniques that should be used by pathologists, consensus has not been reached either. For some, immunohistochemistry itself is a ‘molecular technique’ (and there may be some truth in that, particularly when using antibodies against mismatch repair proteins such as hMLH1 or hMSH2). A slightly broader view would include fluorescent and chromogenic in-situ hybridization (FISH and CISH) as necessary techniques in diagnostic pathology departments. In general, there are very few comprehensive laboratories within histopathology operations offering PCR-based diagnostic tests routinely.

While these considerations and discussions between ‘traditionalists’ and ‘modernisers’ take place, molecular medicine develops further and, with it, the gap between morphology and therapeutic decision-making continues to grow wider (see Figure 1). In many countries throughout the world, this layer of molecular complexity is not always attended to as it should be, or alternatively, it is taken care of by molecular biologists, by laboratories sited in clinical (non-pathology) departments or, most frequently, by research laboratories that double up as diagnostic laboratories for certain tests in a rather amateur manner.

The truth of the matter is that traditional pathology is very necessary, but it is simply no longer sufficient to meet the demands of our clinicians and patients in full. Pathologists should have a clear stand: tissue-based molecular diagnostics, which represents the molecular diagnosis of those diseases that are primarily diagnosed by histopathologists and cytopathologists, should be done in histopathology and cytopathology departments by those that are able to combine the clinical, morphological and molecular knowledge of diseases to better serve the patient. These laboratories (of ‘molecular diagnostic histopathology’) should be run with the same quality control and quality assurance standards as any other existing diagnostic area of pathology. The scope of these tests should involve all areas of molecular diagnostics applied to our histo and cytopathological materials, including
those tests in the area of personalised medicine used for therapeutic decisions, which are a significantly growing number and thus represent many of the bread-and-butter analyses in routine practice and make such laboratory operations financially viable.

Is there a clear understanding among those of us belonging to the British pathology tradition of the importance of this challenge? Looking at the current scope of pathology-based molecular diagnostics in the UK and Ireland, one would think that, although the need for molecular diagnostic histopathology is widely recognised and there are some laboratories that perform a few tests satisfactorily, molecular diagnostic pathology, as such, is still not a common reality and a recognised sub-specialty.

Would the creation of a sub-committee for the establishment and regulation of molecular diagnostic histopathology and cytopathology within The Royal College of Pathologists be a reasonable step forward?

Associate Professor Manuel Salto-Tellez
Senior Consultant Pathologist
Director, Diagnostic Molecular Oncology Centre
Senior Research Scientist
National University Hospital & Yong Loo Lin’s School of Medicine, National University of Singapore

References
Professor Jeremy Robin Jass

Professor Jeremy Jass died on 30 November 2008 after a long fight, bravely fought, against a malignant glioma of the brain. For the past 20 years, Jeremy has been one of the most outstanding gastrointestinal researchers in the world and was in the very highest echelons of gastrointestinal pathologists worldwide. In his career, he won many important awards and prizes. His last, the Goudie Lecture and Medal of the Pathological Society of Great Britain and Ireland, is testament to his standing as this is the top award for pathological research in the UK.

What made him such an outstanding researcher? First and foremost, he was an original thinker. A few years after we both left St Mark’s Hospital in London, one of us (Professor Neil Shepherd) was asked by one of our former surgical colleagues ‘What was it like to work with Jeremy Jass?’ The reply would have surprised some: ‘Well, it was actually quite depressing’. Neil explained that Jeremy and he would come in on a Monday morning and while Jeremy would have had ten new and brilliant research ideas, Neil would have one or two, and most of them bad. It was so very difficult to compete with his intellect and originality of thought.

He had a prodigious output of more than 300 original papers, any number of chapters and many books. He had a particular talent for writing and his papers were always clear, insightful and so very well produced and constructed. Amongst the more academic texts, he wrote a superb textbook for medical students.

Jeremy was always challenging dogmas and perceived wisdoms in his research. For example, more than 25 years ago he wrote a seminal article in the Lancet challenging the universally held belief that the metaplastic polyp (now universally known as the hyperplastic polyp) was entirely benign. Whilst few if any believed him then, his work, and that of others, has subsequently shown that the pathway involving this lesion accounts for up to 25% of all colorectal cancers. There is real irony in that one of the important molecular changes that Jeremy and others have shown to be important in this pathway also occurs in the tumour that Jeremy suffered.

Jeremy qualified from the Westminster Hospital in London in 1975 and held early jobs in pathology there. Amongst the many tributes to him that we have seen is one from his then Professor, now President-Elect of the International Academy of Pathology, Professor Kristin Henry. This is a short extract from her tribute to him:

“What always struck me about Jeremy was not only his high intellect, originality of thought and dedication to his work but his wonderfully kind and gentle personality and complete absence of malice or conceit.”

Much of Jeremy’s original research at that time was in mucin histochemistry, especially analysing the changes seen in gastric carcinogenesis. He worked closely with Dr Isabel Filipe. At this time, his talents had been recognised by the wider pathological community. One of us (Dr Basil Morson) remembers how he was acknowledged to be a star in the making at a very early stage in his career. Basil was approached by the Director of the (then) Imperial Cancer Research Fund and together they ensured that Jeremy moved, in the early 1980s, to the old St Mark’s Hospital and started working more on colorectal carcinogenesis. His partnership with Basil Morson was fruitful and he eventually replaced him as the consultant pathologist at St Mark’s Hospital, when he retired in 1986. Despite important collaborations, Jeremy also showed how dynamic and single-minded he was with an extraordinary output of work, original papers, chapters and books, including editorship of the flagship UK gastrointestinal pathology textbook, Morson and Dawson’s Gastrointestinal Pathology.

He always sought new challenges and this is what took him to Auckland, New Zealand, in 1988. Here he met his wife, Johanna. What a partnership theirs has been and Johanna has always very strongly supported Jeremy in his professional work, aided by her background in histopathology. Their sojourns in Auckland, Brisbane and Montreal were all supremely fruitful and his collaborations with workers in all these places were strong and long-lasting. After some years in Montreal, he looked for new challenges and so his last great challenge was returning to St Mark’s Hospital and to Imperial College, London, as Professor of Gastrointestinal Pathology, to join up with friends and colleagues there. Sadly, his work was to be tragically cut short by illness.

Jeremy was not just a great researcher; he was a superb clinician and diagnostician. He was very
widespread, not just in pathology. He was, in his time, a skilful administrator.

What of Jeremy the man? Kristin Henry has eloquently encapsulated him in her dedication of him. We would describe him as a gentle man and a gentleman. We have never heard anyone say anything ill of him. Although he was utterly committed and dedicated to medicine, his life was not just about medicine. He had many outside interests, including being a talented artist and musician.

It is tragic for his family, his friends and his colleagues that his life, and his life’s work, should be cut short, as there was so much more potential in his work in medicine. However, he does leave behind an exceptional legacy. The results of his research, especially in colorectal cancer, will remain important for years to come and we have his prodigious volume of work. His influence will live on and we should be grateful for that.

Professor Neil A Shepherd
Dr Basil C Morson

New Year Honours list

We note the conferment of honours to the following Fellows and warmly congratulate them on their achievements.

Knight Bachelor
Dr Mark Walport

Dame Commander of the Order of the British Empire
Professor Sally Davies

Commander of the Order of the British Empire
Dr Nigel Lightfoot

Officer of the Order of the British Empire
Dr Geoffrey Ridgway

Member of the Order of the British Empire
Dr Chitra Bharucha

Deaths

The deaths of the following members were announced at the January 2009 Council meeting. We extend our condolences to those who grieve for them.

Bryan BALLANTYNE (Fellow Overseas, toxicology)
Anthony CLARK (Fellow UK)
Naomi DATTIA (Fellow UK)
Herbert FALK (Honorary Fellow Overseas)
Colin Gregory GOODBOURN (Fellow UK, medical microbiology)
Ferdinand HILLMAN (Fellow UK)
Jeremy Robin JASS (Fellow UK, histopathology)
Charles Heriot JELLARD (Fellow Overseas)
Neil MACLEAN (Fellow UK)
Gwyn MORGAN (Fellow UK)
Robert John MORGAN (Diplomate UK, clinical cytogenetics)
Jennifer Ann ORCHARD (Fellow UK, haematology)
Hubert Armand SISSONS (Founder Fellow UK)
Medical consultants: new appointments, offers and retirements

The following appointments have been offered (as at 26 February 2009), and are naturally subject to acceptance by the applicants. The lists are prepared by the College’s Workforce Department, on the basis of returns completed by College Assessors on Consultant Advisory Appointment Committees and submitted by the above date. (Please note, however, that 20% of AACs failed to submit their returns to the College, so our data is unfortunately incomplete.) Any forms received after this date will be published in the next issue.

If doctors fail to take up their posts or have any additional information, they should inform the Workforce Department on medicalworkforce@rcpath.org. Whenever you move homes or jobs, please remember to inform the College Membership Department too, sending your new details to membership@rcpath.org

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<td>Dr N Farah H Sandhu</td>
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Do you want to travel to exotic locations? See the world?

Okay, so not exactly the world, but you will see more of the UK and meet some interesting people. The College needs assessors in all pathology specialties from all regions to represent the College at Advisory Appointments Committees. The criteria for College Assessors are:

- to be a medically qualified College member, listed on the GMC Specialist Register and participating in a CPD scheme
- to have been a consultant for a minimum of three years
- to be in active practice (i.e. not retired from the NHS or equivalent practice)
- to have training in equal opportunities legislation.

For more details and a self-nomination form please see www.rcpath.org/index.asp?PageID=742

Please be assured that completion of the form does not commit you to anything – we may not need to call on you often and of course you can always say no if it’s inconvenient.

If you have previously nominated yourself, please ignore this request.

Reshma Patel
Workforce Coordinator
reshma.patel@rcpath.org
The Independent Review of NHS Pathology Services in England

Dear Editor,

The Report of the Second Phase of the Review of NHS Pathology Services in England has been eagerly anticipated. It is a wide ranging document that recommends several strategies for clinical and service quality improvement. Lord Carter and his colleagues aspire for a cost-effective, patient-centred service with an integrated ‘end-to-end’ provision, and this is emphasised at several points in the report.

‘End-to-end’ is defined as being ‘from request being made to delivery of an interpreted result.’ This is clearly a very good start, and should be within the scope of most pathology services to deliver, although phlebotomy, logistics and transportation may require some further work. However, I would contend that this definition of ‘end-to-end’ is probably too narrow, and should probably extend to a point before a request is made.

The importance of educating our clinical colleagues in the appropriate use of laboratory tests, and their interpretation, should not be underestimated as a determinant of quality and cost-effectiveness. The education of medical students, junior doctors and nurses continues to be an important function of many laboratory staff. One hopes that this will remain to be the case in the future, and that the commissioners of pathology will ensure that the education of hospital staff is a component of any service contract. Furthermore, the educational objectives in pathology training ought to be made more explicit, with an essential core embedded into all medical curricula. The reasons for the high rates of inappropriate requesting referred to in the report, are likely to be complex and, whilst the development of a pathology ‘formulary’ will no doubt provide essential ongoing support to clinical staff, this can be no substitute for a sound initial grounding in the elements of pathology.

Professor Gordon Ferns
Dean of Medicine and Professor of Metabolic and Molecular Medicine
Faculty of Health and Medical Sciences, University of Surrey

Reference

Amyloid, apples and analogies

Dear Editor,

The article by Howie and Brewer (RCPath Bulletin 2008;144:263–266) about amyloid, ‘Apple-green birefringence?’, was interesting in itself but also served as a reminder of how often we pathologists describe lesions and changes in terms of fruits or vegetables. This may not seem unreasonable, especially in view of the College’s interests in the use of plants (see its leaflet, Pathologists and Plants and its successes at the Chelsea Flower Show), but such botanical comparisons can present problems.

Difficulties usually arise because students and trainees are not familiar with the plant in question. Thus, here in Trinidad at the University of the West Indies, our veterinary students are all taught about “mulberry heart disease” (hepatosis dietetica – a nutritional myopathy of pigs) but, in truth, none of them has ever seen a mulberry! I was in a very comparable position forty years ago. Like all undergraduates studying in the Faculty at Medicine at the University of Bristol, I had learnt about “nutmeg liver” but I had never seen a nutmeg (other than post-war nutmeg powder) until, after graduation, I started work in East Africa.

The Editor of the Bulletin commented on the amyloid article “‘apple green’ does seem to me to describe the colour nicely”. This may be true but one wonders how many pathologists born and trained in the tropics would feel really confident about distinguishing the colour of an apple from the various other shades shown by (e.g.) an unripe mango or a freshly fallen avocado. Things may be changing to a certain extent, because fruits that would once have been considered exotic are now often to be found in supermarkets, but this is still not the case in more isolated parts of South America, Africa and Asia.

Pathologists enjoy description and most are excellent observers. A substantial number are interested in natural history and the living world around them. Thus, it is not only plants that have provided the medical and veterinary professions with evocative terminology. Some years ago Allen and Cooper drew attention to the once widespread use of anatomical terms relating to animals to describe pathological changes in Homo sapiens. They cited John Hunter (1728–1793) as an example of one whose grounding in zoology and knowledge of comparative morphology enabled him to use such description to advantage – as, for example, when he compared the appearance of the rectum of one human patient to the (normal) intestine of a turtle.

Hunter spoke and wrote from personal experience and so, returning to the original theme of this letter, he would probably
have been familiar with the green colour of some varieties of English apples. He would also have recognised the pathological features of chronic venous congestion of the liver – but would he have related them to the appearance of a nutmeg, or chosen something closer to home?

It seems likely that pathologists will continue to use descriptive terms that relate to familiar items around them. This is understandable and, especially for patients and students, makes the subject more interesting and relevant. However, there are, I suggest, inherent pitfalls in such an approach. In particular, not everyone may be familiar with the plant or animal with which the comparison is being made. In the case of colour, there is the added danger that not everyone sees greens or blues in the same way. For this reason, here at the School of Veterinary Medicine, The University of the West Indies, we use colour codes, in addition to standard morphometrics, and these help to standardise our descriptions.1

Perhaps in the long term it may be wiser for us to have grading or scoring systems so that we can quantify all the parameters that we use to characterise a lesion or a staining reaction. This approach may not have the same cachet as a description that is based on the appearance of plants or animals but it enables findings to be better compared and computerised, whether or not the student is familiar with green apples, nutmegs or turtles!

John E Cooper
Professor of Veterinary Pathology
School of Veterinary Medicine
The University of the West Indies
St Augustine, Trinidad & Tobago

References

Pseudo-bacteraemia

Dear Editor,

We read with interest the audit from the team in The Great Western Hospital, Swindon (RCPath Bulletin 2008;144:290), addressing the perennial problem of pseudo-bacteraemia. The team from Swindon, in keeping with Saving Lives, used swabs containing 2% chlorhexidine in 70% isopropyl alcohol.1 Our local experience suggests that audit alone may be as effective as 2% chlorhexidine in 70% isopropyl alcohol in reducing blood culture contamination.

The highest contaminant rates in one of our hospitals came from the paediatric emergency department, with a particular problem in children below one year of age (16 contaminants from 102 samples, 15.7%). In response we conducted a nine-month audit, using an interrupted time series design, to assess the impact of introducing 2% chlorhexidine in 70% isopropyl alcohol, limiting our intervention to the introduction of the new...

John E Cooper
Professor of Veterinary Pathology
School of Veterinary Medicine
The University of the West Indies
St Augustine, Trinidad & Tobago

Dr Tony Roques
Retired Consultant Haematologist

Pathology teaching for undergraduates

Dear Editor,

It was most encouraging to read Paul Stephenson’s winning entry for the Annual Undergraduate Essay Prize (RCPath Bulletin 2009;145:48–52) and to see pathology so robustly defended as an integral part of modern medical education. If it is really true that ‘a knowledge of pathological processes is the bedrock of virtually all aspects of clinical medicine’, the obvious corollary of this is that the formal assessment of undergraduates prior to qualification as doctors must include a formal examination in pathology. Unfortunately one cannot assume that all undergraduates are as strongly motivated as the author, and it is surely in the public’s interest to ensure that a minimum standard has been achieved in this most important and fundamental of all medical disciplines.

The case can similarly be argued for at least some formal teaching of pathology in the undergraduate curriculum and to expect pathologists to play a part in this, particularly if, as the author says, most pathologists want to teach. If current levels of staffing in the teaching hospitals do not permit this, then additional funding should be provided. The investment would prove enormously worthwhile in the long term.

Dr Tony Roques
Retired Consultant Haematologist
skin-cleaning product to assess if this alone could impact significantly on contamination rates.

Pre-intervention, the contamination rate was 8.84% (29 of 328 cultures, August to October 2007). During the intervention, the contamination rate fell to 6.4% (31 of 484 cultures, November 2007 to January 2008). Post-intervention, the chlorhexidine/alcohol swabs were withdrawn and the contamination rate fell further to 5.98% (41 of 686 cultures, February to April 2008), as shown in Figure 1. The difference in pseudo-bacteraemia rate between pre- and post-intervention phases approached but did not achieve statistical significance (X2=2.83, p =0.09).

Our results suggest that audit itself may be as effective in reducing contaminants as the introduction of a particular skin decontamination product. There is no universal benchmark of an acceptable contamination rate from blood cultures; the only standard revealed by a review of the literature dated from 1982 when the American Society of Microbiology suggested that such a rate should not exceed 3%. Whilst we do not discourage the use of chlorhexidine/alcohol, our principal action to minimise contaminants is the audit of directorates against the 3% standard, as one of the Trusts’ infection control performance indicators.

References

Antimicrobial Drugs: Chronicle of a twentieth century medical triumph
David Greenwood
Oxford University Press, 2008
368pp, £65
ISBN 978 019 953484 5

I received this book after its assigned reviewer felt he had not the time to write a review of it. I’m so happy he didn’t. This has been one of the most enjoyable and interesting books involving medical microbiology that I have ever read. David Greenwood takes the reader on an exciting journey describing the amazing and often serendipitous discoveries in this complex field. He starts with a masterly 22-page sketch giving brief descriptions of the agents of infection. He continues with antimicrobial pre-history and then into the 16th century, with the amazing tale of the discovery of quinine before moving into the classic magic bullet territory of Ehrlich and chemotherapy. Professor Greenwood details the development and the pure, amazing luck involved in the discovery of penicillin and the cephalosporins. The development of anti-tuberculous agents, of antileprosy, antiparasitic, antifungal and antiviral agents follows. He finishes with a short chapter on antimicrobial resistance.

What I particularly enjoyed was the picture the author paints of what went on before these marvellous drugs were discovered and used. The tragedy of childbed fever in the UK before sulphonamides arrived. The truly awful measures to treat childhood scalp ringworm up to the 1950s. And in his chapter on antituberculous drugs, he well conveys the hope that the first drugs brought and then the growing frustration and horror as resistance occurred again and again after each new development.

But my favourite parts of the book occur where the author makes clear the amazing serendipity of it all. From the early attempt to make quinine which failed but started the artificial dye industry with the discovery of the pigment mauve. This same industry went on to provide prontosil and other bacterial drugs 50 years later. Fusidic acid from monkey dung! The anaerobic activity of metronidazole discovered by a trainee dentist! Orally-absorbable penicillin V made by accident in a brewery in Austria!

This enjoyable book is essential reading to all interested in the history of medicine and it makes a valuable addition to the medical history literature. I also recommend it to any of my colleagues who’ve ever wondered about how we have got to where we are now. Have you ever wondered what the V in penicillin V stands for? I now know but I’m not telling you – read the book to find out.

Professor John Croall
Consultant Microbiologist
Countess of Chester Hospital
In 1943, he was made the director of the Sino-British Science Co-operation Office in Chongqing, from 1942 to 1946 the wartime capital of China. He travelled extensively in China, visiting many historical sites and educational institutions. He also accumulated a vast amount of reference material, which he shipped back to the UK. Winchester’s account of these adventures vividly describes the trials and tribulations of traveling in China during these dangerous times. Needham, however, remained positive and passionate about China and its scientific and technical achievements. The historical items, data and information he collected and the colleagues he met provided the framework and much of the evidence he used in the production of his masterpiece.

In 1946–1948, Needham became the first Head of the Natural Science Division at UNESCO. Indeed, it was Needham who insisted that science should be included in the organisation’s mandate. In 1952, he misguidedly backed the communist Chinese and North Koreans in their assertion that the USA had used biological weapons during the Korean War. Winchester attributes this in part to his lifelong left-wing views, but also to his belief in intellectual integrity of scientists. As a consequence, he was banned from travelling to the USA until the 1970s.

Although much of his time and energy was devoted to his passion for Chinese science and technology, he remained active in College life. He was also elected Master of Gonville and Caius for ten years from 1966–1976, became a member of The Royal Academy in 1971 and made a Companion of Honour in 1992. He died in 1994.

Dr John Marples
Retired Chemical Pathologist
Chorley, Lancashire

Infectious Diseases: Atlas, Cases and Text
Robin A Cooke
McGraw-Hill, Australia, 2008, £65, 503 pp
ISBN 978 0 070 15906 8

The Loneliness of the Long Distance Runner has become a modern classic. Had Alan Sillitoe written about The Loneliness of the Academic Book Reviewer, it is likely that the piece would not have troubled even the lower reaches of the best-sellers list. A tale of late nights spent ploughing through worthy but dull tomes, which are then furtively carted off to the local second-hand bookshop, would hardly be one to set the pulses racing – but such is the lot of the jobbing reviewer. Infectious Diseases (one can picture
the white heat of the brainstorming session in the publisher’s marketing department that led to naming of the book) is, however, a different kettle of fish: this book was an absolute joy to review.

If there is a textbook equivalent of a ‘page turner’, this is it. In essence, this book is an atlas with many hundreds of superb images collected from around the world over the course of the author’s career. Nearly all of the images are in vibrant colour and include clinical photographs of patients, those taken during surgical and other procedures as well as gross or microscopic pathology and microbiology, both macro- and microscopic. In addition, there are pictures illustrating key elements in the epidemiology of infections. We see, for example, grinning sun worshippers on the shores of Lake Malawi and a hunter posing triumphally with the bear he has just dispatched, unaware of looming respective dangers of schistosomiasis and sparganosis.

The figures are of the highest quality and the author himself foresees in his introduction that these will be ‘borrowed’ for lecture presentations – a refreshing change from the pixelated, stretched-to-fit images culled from the internet that so often feature in PowerPoint slides. There are also a large number of case studies, presented in a rather refreshing vernacular style, which complement individual topics.

Some might point out that the book is selective in its coverage of infectious disease, but the author justifies this by arguing that there are many infections whose presentation is unremarkable from the point of view of clinical signs and other features that would make an informative image. Others might complain about the lack of reference to contemporary diagnostic techniques: PCR merits a mere paragraph and immunofluorescence is not mentioned at all. The author’s justification for this approach – that the rate of introduction of new tests would make them obsolete before the book was to be printed – is not wholly convincing. There is a strong bias towards tropical diseases, in part reflecting the geographical locations in which the author and his colleagues have practised, which serves as a salutary reminder of the morbidity and disfigurement associated with these infections.

For this reviewer, the icing on the cake was the frequent references made to the historical aspects of the infections. These vignettes are also superbly illustrated with pictures of, for example, the (often magnificently hirsute) founding fathers of microbiology and infectious diseases, the locations where they worked and fascinating artefacts (such as the moulage of plague victims produced by the 17th-century Italian wax-modeller, Zumbo) from museums around the world. The book is also a feast for trivia fans. Did you know that professional boar hunters (and, I dare say, amateur ones, too) kit out their dogs with specially designed leather aprons to protect the animals from injury from the tusks of boars that are not killed by the hunter’s first shot?

Infectious Diseases is not an alternative to any of the standard texts on the subject – nor was it intended to be. Instead, it is a superb resource to supplement them and well deserves a place on a personal or departmental bookshelf.

Professor Kevin Kerr
Consultant Medical Microbiologist
Harrogate General Hospital

Transfusion Microbiology
John AJ Barbara, Fiona AM Regan, Marcela Contreras (editors)
Cambridge University Press, 2008, 390 pp, £80
ISBN 978 0 521 45393 6

This is a much needed definitive textbook on the subject of transfusion microbiology, a term first introduced by one of the editors, John Barbara. The chapters are well laid out and comprehensively cover the extensive measures taken to minimise the microbiological risks of blood transfusion and key developmental advances in this important field. This book should serve as an extremely useful source of information for medical, scientific and technical staff working in clinical and research fields in haematology, transfusion and microbiology within hospitals and blood centres in various countries. The avoidance of too many colour prints has helped to keep the cost of this extensive resource comparatively modest and thus more widely accessible.

The importance of various infective agents is considered in a historical context, along with the significance of newly discovered viruses more readily detectable with a broad range of molecular diagnostic techniques. Commonly recognised infective risks from syphilis to HIV, together with the current challenge to transfusion safety posed by prion disease and the possible impact of other emerging infections, are all covered with a clear and comprehensive approach. The topics include the principles of donor selection to a thorough description of various serological tests and nucleic acid testing (NAT), with a good section on the possible applications of new technologies to pathogen detection. There is also a useful comparison between the strategies for NAT testing in the UK and the US.

The chapter on bacterial contamination of blood is a timely reminder of this important and potentially fatal complication of transfusion which is, up to a point, amenable to corrective strategies.

While careful donor selection and donation screening are regarded as the cornerstone in reducing transfusion transmitted infection, the well recognised contribution of processing and component modification after collection towards increasing transfusion safety is also covered. A discussion of the relative merits of leucodepletion is provided, together with an overview on the techniques available for pathogen inactivation. A chapter on fractionation covers the historical risks and current safety profile of viral inactivation techniques. Various aspects of risk assessment, risk management and regulatory issues are considered.

There is an informative section on the investigation of post-transfusion infection in recipients, the usefulness of a national register in studying the natural history of such infectious agents and also the important role played by haemovigilance schemes in surveillance of transfusion adverse events. An additional use-
ful part of this section highlights the recommended action in the management of donors with positive microbiological results.

The final chapter on blood safety in developing countries gives a much required global perspective, putting into context the vast resources invested in reducing the already extremely low risks of transfusion-transmitted infection we now encounter in developed countries.

This excellent book, written by many experts, provides a ready source of detailed but easily accessible information on key aspects within the important field of transfusion microbiology.

Dr Shubha Allard
Consultant Haematologist
Barts and the London NHS Trust and NHS Blood and Transplant

Cell and Tissue Based Molecular Pathology
Raymond R Tubbs and Mark H Stoler
Churchill Livingstone
Elsevier, 2008
441 pp, £85.99
ISBN 978 0 44306 901 7

This book is a welcome addition to a growing list of clear, detailed and up-to-date books for the surgical pathologist in the ‘Foundations in Diagnostic Pathology’ series. As stated by the editors, it is the only volume in the series to concentrate on practical clinical molecular pathology, with an emphasis on current, validated and diagnostically important applications. There have been other recent books on the same topic, but this one provides a more thorough review of current and emerging molecular tools and techniques, with particularly interesting chapters on molecular detection of circulating tumour cells and the possibility of intra-operative molecular staging using real-time PCR, whilst more prosaic topics such as quality assurance are also covered.

Diagrams are used to good effect in describing the mechanics of the techniques used and a refreshingly high proportion of the figures are in colour, including line diagrams. The tables are also very clear and highlighted. As a result, the chapters on the techniques behind this emerging field, which take up nearly half the book, are very helpful.

The second part of the book details the molecular abnormalities particular to each tumour and system type. It is laid out nicely and covers each area well, though the level of detail is less than some other texts. However, each chapter incorporates a brief résumé of the pathology of each of the conditions detailed, so that the clinical context of the tests described can be appreciated, whilst there is also reference at many points to the underlying pathogenesis of the disorders upon which the molecular tests rest. This makes the book more readable, accessible and relevant to a diagnostic pathologist than a more detailed but dry description of all tests available, which may also soon become out of date in such a rapidly moving field. The illustrations, particularly the microphotographs, are of a particularly high standard.

The book suffers throughout from a consistent lack of referencing in the text. This would have been helpful to direct one to source material, which is very useful in this field given the detail of primers, probes, and methods required to undertake or interpret such tests. However, a list of useful reading is given at the end of each chapter, which goes some way to alleviating this. The index is adequate, though there were a few subjects I had difficulty finding in it. Nonetheless, the logical layout of the book and the clear subheadings in each chapter do make it easy to find one’s way around the book.

Overall, I found this a useful, interesting, engaging and relatively inexpensive book, and one that should be of interest to any surgical pathologist, regardless of their specialty given its wide coverage. I would particularly recommend it to trainee pathologists as a good introduction to what is likely to be a growing field during their careers.

Dr Richard Byers
Consultant Histopathologist
Cancer Studies, University of Manchester

Fundamentals of Analytical Toxicology
Robert J Flanagan, Andrew Taylor, Ian D Watson and Robin Whelpton
J Wiley, 2008, £39.00, 505 pp
ISBN 978 0 470 31934 5

Fundamentals of Analytical Toxicology provides principles and practical information of the analysis of drugs, poisons and other relevant analytes in biological specimens. The material contained within the book is intended to cover part of the basic theoretical syllabus of the Association for Clinical Biochemistry (ACB) Pre-Registration Training Course in Clinical Chemistry, subspecialty Analytical Toxicology.

The first chapter covers a general overview of analytical toxicology, including historical perspectives and a summary of modern advances. The second and third chapters describe the appropriate methods of sample collection, transport, storage and preparation.

The remaining text is divided into individual chapters, each dedicated to an in-depth and comprehensive discussion of specific analytical techniques. Some of the techniques covered include spectrophotometry and luminescence techniques, gas chromatography, thin-layer chromatography,
high performance liquid chromatography, capillary electrophoretic techniques, mass spectrometry and immunoassays and enzyme-based assays. These chapters focus heavily upon instrumentation and methodology, but also cover the major advantages, disadvantages and applications of each technique within analytical toxicology.

A whole chapter is dedicated to trace elements and toxic metals, covering specific sample requirements and the range of techniques available for the quantitative analysis of metal ions and other species in biological samples.

The remaining chapters cover a variety of topics: basic laboratory operations and issues relating to laboratory accreditation and quality; point-of-care testing; drug absorption, distribution, metabolism and excretion; pharmacokinetics and pharmacokinetic modelling; and clinical interpretation of analytical results. A complete reference list follows all the chapters.

Overall, this book provides a detailed yet clear account of the essential practical aspects of analytical toxicology. Despite covering instrumentation and methodology in great depth, the book remains remarkably readable, even for those with little experience in this field. The text benefits from supplementation with boxes highlighting key points throughout, and from the numerous simple yet informative illustrations. The addition of some colour would further enhance the readability of the text. The extensive list of abbreviations at the start of the book is another useful inclusion.

This text comes highly recommended for any analytical toxicology trainee. Specific chapters, such as those covering sample collection and storage as well as xenobiotic absorption, distribution, metabolism and excretion, may also be a useful addition for those preparing for FRCPath examinations in toxicology.

Jennifer Nicol
Toxicological Pathologist
AstraZeneca Research and Development
Safety Assessment UK, Macclesfield

Atlas of Orthopedic Pathology (3rd edition) with CD-ROM
Saunders Elsevier, 2008, £18.560 pp
ISBN 978 1 41605 328 6

This book, as stated in its preface, is intended as an introduction to the complex subject of orthopaedic pathology. It offers a starting point for pathology, radiology and orthopaedic residents (trainees) to learn about clinical, radiographic and pathologic features of common and uncommon orthopaedic conditions. I believe it accomplishes this in a very well organised lecture-note form, complemented by excellent quality macroscopic, microscopic and radiological images. As such, though, it lacks prose-style ‘tips of the trade’ and doesn't explain under the heading of ‘Differential diagnosis’ any hints on how to distinguish the various conditions. The standard of the images is consistently of high quality.

Each chapter is presented in an identical manner, starting with a half skeleton (with full vertebrae) cartoon, which reminds me of the box of bones I still own from medical student days and a rather cute feature. This is followed by an age-group chart and then numbered notes (bullet points) on clinical signs, clinical symptoms, major radiographic features, radiographic differential diagnoses, major pathologic features, pathologic differential diagnoses, pathogenesis and treatment.

The pathologic features are predominantly separated into gross macroscopic and microscopic findings. When there is lack of separation into macroscopic and microscopic findings, it indicates that a disease is unlikely to be encountered in the surgical cut up. This enables a degree of selection for pathology trainees concentrating on orthopaedic cases likely to turn up as a spotter case in the surgical cut-up exam (split into macroscopic and microscopic findings) versus those more likely to be encountered at post-mortem (not split).

Flicking through the book, many of the histology images look incredibly similar to one another, reminding one how important it is to take into account the radiological and clinical findings before coming to an accurate orthopaedic diagnosis. This book beautifully pictorially testifies to this.

On the back cover, it states that the book masters the latest advances, from the newest immunohistochemical approaches to the most current imaging techniques and disease classification. I think this is rather an over-exaggeration, and thus it does not quite live up to the cover. I identified only a few MRI images and just two immunohistochemical images. Special stains were used sparingly but appropriately, and there were a couple of electron micrographs. Cytology made an appearance in a few cases, but could have been present in a few more.

Also on the back cover it states that it represents an expert opinion. But it doesn't and in its preface never was intended as such.

It is accompanied by a CD-ROM, which was easy to install on my NHS computer without the IT police blocking it. The CD just contains the radiological and pathological images with their annotations. It does not include the full text, such that using the search engine for ‘age’ and ‘tumor’ (US English only!) gave me ‘Pagets’ and ‘tumor’ words in all these annotations only. Disappointingly, the half skeleton does not make an appearance. The clarity of the images had the same clarity as in the book on my NHS computer, but was not good on my ancient home laptop. The ability to copy and paste the images is there if required.

This book is a comprehensive atlas, with a consistency of style that will put any trainee on the right road to obtaining a good basic understanding of orthopaedic pathology and provide a very useful check list for the non-specialist reporting pathologist consultant. There is a very good UK English version of a colour atlas of Bone, Joint, and Soft Tissue Pathology by N Athanasou, which it will not usurp on my shelf. As stated on the back cover, there has clearly been exquisite care taken in its production and the images are exquisite too.

Dr Sally Ann Hales
Consultant Pathologist
Countess of Chester Hospital, Chester
Robboy’s Pathology of the Female Reproductive Tract (2nd edition)
Stanley Robboy, George Mutter, Jaime Prat, Rex Bentley, Peter Russell and Malcolm Anderson
Elsevier Churchill Livingstone, 2008, 1104 pp, £149
ISBN 978 0 443 07477 6

The modern credentials of this 2009 edition are firmly established with provision of online access to the whole of the book, including scalable images, links from the texts to the reference list and hyperlinks from there to the abstract in PubMed. This is incredibly useful in the preparation of lectures and tutorials, although the images do not have sufficient definition to be imported into PowerPoint for presentation, even if copyright were not an issue. Registration for online access is reasonably simple, but if you are too enthusiastic scratching the cover off the access cover, you may have difficulty interpreting the characters.

As for the content, this work is published in America but has an impressively international panel of authors and contributors. The book is well illustrated in colour throughout, with most of the photographs being excellent. Unfortunately, the infamous ‘Robin Hood’ mitosis in CIN 3 (with a picture of a statue of the individual) has been allowed to remain.

As with all American books, there are some differences to UK practice. The World Health Organization (WHO) classification of hyperplasia is abandoned in favour of endometrial intraepithelial neoplasia (EIN) and in doing so much of the detail of the diagnostic entities in dysfunctional uterine bleeding has been lost.

The chapter of cervical pre-cancer includes some excellent colposcopic photographs, but mixes CIN and HSIL terminology rather confusingly.

The cut-up technique chapter is equally idiosyncratic and UK practitioners should stick to the College’s Cancer Datasets and Tissue Pathway guides.

There is a useful, fairly comprehensive chapter on immunohistochemistry and FIGO staging schemas are also included. A modified WHO/Armed Forces Institute of Pathology/International Society of Gynecological Pathologists classification table also includes SNOMED.

This is an up-to-date book, both in its content and manner of presentation. It is easy to read and the index is good. The small single-author, single-organ or single-subject textbooks give more detail, but if you bear in mind the transatlantic differences of terminology and classification, Robboy’s should provide an excellent everyday knowledge source.

Dr Laurence Brown
Consultant Histopathologist, Leicester Royal Infirmary
College’s Histopathology Sub-Specialty Advisor in Gynaecological Pathology

The Washington Manual of Surgical Pathology (32nd edition)
Peter A Humphrey, John D Pfeifer and Louis P Dehner
Lippincott, Williams and Wilkins, 2008, 816 pp, £32
ISBN 0781765277

This book aims to provide an in-depth practical guide to pathologists and clinicians. The main advantage of this book is that it includes all the systems. The beginning of each section is devoted to gross examination, this is followed by discussion about the histology of both benign and malignant conditions and finally, a brief mention of cytology. Helpfully, the book gives tumour classification as well as staging and grading all in the same volume.

The book gives very practical advice in simple terms. For example, in the section on inflammatory bowel disease, it describes an approach to take for biopsies to diagnose Crohn’s disease in the absence of granulomas. It proceeds to describe other conditions that cause focal colitis and cautions against labelling a patient as Crohn’s disease on the first biopsy, but rather to give descriptive diagnosis and differential diagnosis. Sometimes after reading speciality books, this simple sensible approach to biopsies is not clear.

The manual can serve as a benchtext for reporting most of the cancer specimens. However, the North American approach to a few specimens differs from British practice. Breast cancers are staged on basis of TNM staging, while in the UK the practice is to use the Nottingham prognostic index.

The principal drawback is that an internet connection is required to look at the illustrations as there are none in the book. I would recommend this book to trainees, especially to those studying for exams. It may be useful for district general hospital pathologists, but is unlikely to be useful for subspeciality consultants.

Dr Nidhi Tandon
Trainee Histopathologist
Royal Hallamshire Hospital
Paediatric aspects of forensic medicine are usually covered by separate chapters in general texts, which seldom allow deep or detailed consideration of the often highly controversial issues that arise in the paediatric field. The only comparable book of which I am aware is the similarly titled ‘Paediatric Forensic Medicine and Pathology’ edited by Mason and published by Chapman and Hall Medical in 1989. No new editions of this work have appeared, and its scope is much more modest. Busutti and Keeling’s excellent and long-awaited book therefore fills an important gap in the literature and will be of considerable value to those legal and medical practitioners brave enough to involve themselves in our criminal and family courts dealing with the maltreatment and abuse of children.

The first few chapters are essentially clinical and include highly informative and balanced contributions by Helen Hammond on clinical assessment and by Jacqueline Mok on suspected child sexual abuse, where the many pitfalls for the uninitiated are carefully indicated. Angela Thomas provides a comprehensive description of haematological conditions and clotting disorders rarely indicated. Angela Thomas provides a comprehensive description of haematological conditions and clotting disorders that may mimic or be confused with abuse, and which represent only one end of a spectrum, I would have welcomed more detailed description, perhaps advice on the examination of the death scene as well as informative contributions to those legal and medical practitioners brave enough to involve themselves in our criminal and family courts dealing with the maltreatment and abuse of children.

I particularly liked the chapters written by the editors of this volume. Professor Busutti provides a detailed consideration of the death scene as well as informative contributions on asphyxial deaths and accidental injuries. His advice on expert testimony is extremely apposite and should be read carefully by anyone contemplating acting as expert witness. Jean Keeling gives highly authoritative accounts of post-mortem examination and forensic issues involving fetal and perinatal deaths. Her contribution on ‘SIDS or something else?’ is particularly thoughtful and pertinent, reflecting her unrivalled experience of this area. The chapter on immersion-related deaths by John Pearn is another high point. Such deaths in children are not uncommon, and the reader is lead with great clarity through the various pertinent forensic aspects. The chapters on DNA profiling (Alex Graham and David Harrison) and dental identification (Howard Moody) are necessary components of a modern forensic textbook and the contribution on sudden natural death in infancy and childhood (Dick Varioed) is commendably comprehensive. Sudden unexpected deaths in hospital, especially where they involve children, may often involve pathologists in subsequent litigation, inquiries or inquests. Anyone facing this professional challenge will welcome Jem Berry’s chapter.

Skeletal involvement in child abuse is covered by Maeve McPhillips; she gives an admirable and well-illustrated account of the radiological aspects, but I would have liked to see some bone histopathology in this section. This might have involved co-authorship of this section with a bone histopathologist who could have covered issues such as radiological/histological correlation, aging of injuries etc., since these are often issues in court. Some description of the histopathology of brittle bone disease would be welcome. I would also suggest that inflicted intra-abdominal visceral injuries might merit more pathological description than just their inclusion in a radiological chapter.

I would take the same view on ocular injuries, the clinical aspects of which were very expertly covered by Harry Willshaw, but could conceivably have benefited from some additional input from an ocular pathologist familiar with forensic issues, particularly in relation to head injury.

I believe too, that the chapter on head injuries would also have been improved by more pathological emphasis. The clinical aspects are very fully covered by Robert Minns and Milly Lo, but the pathological perhaps less fully. Inflicted head injury is the most common form of fatal non-accidental injury in infancy and the controversies surrounding these cases in court are well recognised. Whilst appreciating that the fatalities represent only one end of a spectrum, I would have welcomed more detailed description, perhaps advice on the examination of the head at post-mortem in suspected cases, and more discussion of the controversies.

In general, this is a well-written book in a clear format with well-chosen references. I noticed only minor defects such as the reversal of legends in Figs. 11.9, 11.10 and 12.5, but for the most part presentation was excellent. I would expect this book to be enthusiastically received by its intended readership of medical and legal practitioners dealing with inflicted injury in childhood.

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May 2009

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8 May 2009
The Royal College of Pathologists, London
6 CPD credits
The aim of this study day is to present up to five latest significant publications and/or recent advances that are likely to be included in future textbooks and will influence diagnostic and research activities in some of the major subspecialties in cellular pathology. The speakers will select what they regard as the most useful new developments in their areas of expertise and highlight how these developments will alter everyday practice. They will also be asked to indicate the clinical implications with these advances and why they merit inclusion in textbooks.

June 2009

**Road traffic fatalities: passengers, pedestrians, pathologists and police**
19 June 2009
The Royal College of Pathologists, London
5 CPD credits
In addition to considering the pathological aspects of road traffic deaths this symposium will address the related legal issues that pathologists may face. The content will be suitable both for Consultants undertaking coroners’ post-mortems and for trainees who will see the context in which this type of work is performed.

November 2009

**Immunohistochemistry in Everyday Practice**
6 November 2009
The Royal College of Pathologists, London
Programme arranged by Dr Sanjiv Manek. Further details will be available on www.rcpath.org/conferences.

**Update in Diagnostic Dermatopathology**
17 November 2009
The Royal College of Pathologists, London
5 CPD credits
A Joint Meeting between The Royal College of Pathologists and the British Society for Dermatopathology. The meeting aims to update trainees and career grade histopathologists, dermatopathologists and dermatologists in recent advances in diagnostic dermatopathology.

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British Association for Ophthalmic Pathology (BAOP) 28th Annual Meeting 2–3 April 2009, Hereford
The meeting is open to anyone with an interest in ophthalmic pathology. For further details, please contact John Mould at johnmould@eyevetclinic.co.uk

BAGP/Path Soc study day on endometrial pathology for consultants and specialist registrars 22 April 2009, Birmingham
This study day on endometrial pathology has been organised by the British Association of Gynaecological Pathologists in association with the Pathological Society of Great Britain and Ireland, and aims to provide a practical guide to the interpretation of endometrial biopsies, the diagnosis of endometrial metaplasia, hyperplasia and the concept of EIN. The study day will be conducted by two leading international experts in gynaecological pathology: Professor Glenn McCluggage and Dr Marisa Nucci. Each will deliver a lecture followed by a practical session in which examples of relevant cases will be demonstrated. An educational grant from the Pathological Society has enabled the BAGP to provide the study day to trainees free of charge. 20 places have been reserved for consultants at a nominal charge of £60. Places are limited and early registration is strongly advised. Course details and application forms can be downloaded from the BAGP website (www.thebagp.org). 4 CPD credits.

6th Annual Meeting of the British Association of Gynaecological Pathologists 23 April 2009, Birmingham
This meeting is aimed at histopathologists with an interest in gynaecological pathology. The meeting includes a series of update lectures that focus on areas of diagnostic difficulty including pelvic pathology associated with endometriosis, pseudomyxoma peritonei and unusual ovarian tumours. There will also be a series of illustrative case presentations. Guest lectures will be given by Dr Marisa Nucci (Boston) and Professor Geraint Williams (Cardiff). The programme of the meeting, registration form and maps can be downloaded from the BAGP website (www.thebagp.org). 6 CPD credits.

Bladder, testis, renal course 23–24 April 2009, London
See details on the BAUP website www.uropathology.org. Please reserve a place by contacting Mrs Farida Esufali on Farida.Esufali@cardiffandvale.wales.nhs.uk (limited to 32 participants).

Problems in tumour pathology 16 May 2009, Christie Hospital, Manchester
This course will focus on difficult pseudoneoplastic lesions and benign tumours mimicking malignancy affecting breast, gastro-intestinal tract, soft tissues, lymph nodes, urinary tract and male reproductive system. It will comprise slide seminars and lectures, with guest lecturers Professors Thomas Krausz (Chicago, USA) and Neil Shepherd (Gloucester, UK). The course is suitable for consultant pathologists and specialist registrars. It is under the auspices of the Association of Clinical Pathologists and organised by Dr LP Menasce. Fee: £150, including coffee, lunch and CD containing summary of lectures and key images of the cases. Seven CPD points will be awarded. For details, contact Mrs Liz Ryan on liz.ryan@christie.nhs.uk or 0161 446 3277.

Pathology of Soft Tissue Tumours 8–9 June 2009, The Christie, Wilmslow Road, Manchester, UK
This is a special two day FRCPath course of the University of Manchester. The course is composed of lectures and slide seminars. The speakers are Prof C Fisher (The Royal Marsden, London), Prof L Kindblom (The Royal Orthopaedic Hospital, Birmingham), Dr C Mangham (RJ&AH Orthopaedic Hospital, Oswestry), Dr T Helliswell (Royal Liverpool University Hospital, Liverpool), Dr SS Banerjee and Dr P Shenjere (The Christie, Manchester). For further information and registration, please contact Mrs Liz Ryan, Dept of Histopathology, The Christie, Wilmslow Road, Manchester, M20 4BX, UK. Tel: 0161 446 3277, Fax: 0161 446 3300, e-mail: liz.ryan@christie.nhs.com or Mrs C Harris, ATR 4, Education & Research Centre, Wythenshawe Hospital, Southmoor Road, Manchester M23 9LT, UK. Tel: 0161 291 5811; fax: 0161 291 5806; e-mail:chris.harris@smtr.nhs.uk

Cardiff Pathology 2009, 5th Joint Meeting of the British Division of the IAP and the Pathological Society of Great Britain and Ireland 30 June – 3 July 2009, Cardiff
Further information available from Ms RA Pitts, Pathological Society of Great Britain and Ireland, tel: +44 (0)20 7976 1260, admin@pathsoc.org or visit www.pathsoc.org; or from Mrs C Harris, British Division of the IAP, tel: +44 (0)117 907 7940, bdiap@blueyonder.co.uk or visit www.bdiap.org

Techniques and Applications of Molecular Biology, Warwick University Short Course 13–16 July 2009, University of Warwick, Coventry
A four day course for those in the medical profession wishing to improve their understanding of the principles and applications of genetic engineering techniques. Optional accreditation leads to a masters level Postgraduate Award. Details: Dr Charlotte Moonan, Department of Biological Sciences, University
Sixth Summer Academy of Dermatopathology
20–24 July 2009, Graz, Austria

The course will focus on clinicopathological correlation of neoplastic and inflammatory skin disorders. Faculty includes Lorenzo Cerroni (Graz), Helmut Kerl (Graz), Eduardo Calonje (London), Dirk Elston (Danville), Bernhard Zelger (Innsbruck), Steven Kaddu (Graz), and Laila El Shabrawi Caelen (Graz). Limited to 60 applicants. For information, please contact Lorenzo Cerroni MD, Department of Dermatology, Medical University of Graz, Auenbruggerplatz 8, A-8036 Graz, Austria. Fax: 00 43 316 385 4957; email: lorenzo.cerroni@meduni-graz.at

Association of Clinical Pathologists 23rd ACP Management Course
2–4 September 2009, Hardwick Hall Hotel, Sedgefield, County Durham

This is a wide ranging, residential course introducing management issues relevant to the running of a modern pathology service. It is intended for specialist registrars and trainees in pathology in their final year of training, clinical scientists and those who have held their first consultant post for less than 2 years. Course organisers: Drs Angela and Mike Galloway. Course fee: £615.00/£595.00 for ACP trainee members. Full details from: Jacqui Bush, Association of Clinical Pathologists, Tel: 01273 777500, Fax: 01273 773303, Email: jacqui@pathologists.org.uk. Application form available at www.pathologists.org.uk

Joint pathology/dermatology clinicopathological meetings
17 September 2009, London

These regular meetings take place at the Royal Society of Medicine on the third Thursday of every September, December and January at 2.30 pm. Further details are available at www.rsm.ac.uk/academ/smiterma.php or email dermatology@rsm.ac.uk. Abstracts for submissions by pathologists and dermatologists are welcomed.

16th International Course on the Safety Assessment of Medicines
5–9 October 2009, White Plains, New York

This course, run by the New York Medical College, is designed for scientists in the pharmaceutical industry, especially toxicologists and toxicologic pathologists, and for those responsible for the registration of new drugs. For information, contact Kathy Woodley at New York Medical College, Basic Science Building, Room 413, Department of Pathology, Valhalla, NY 10595-1599; tel: ++ 914 594 3084; fax: ++ 914 594 4163; email: kathy_woodley@nymc.edu

17th International Congress of Cytology
16–20 May 2010, Edinburgh, Scotland

Under the theme of ‘Learning from Each Other’, the 17th International Congress of Cytology at the award-winning Edinburgh International Conference Centre will providing a unique opportunity to exchange experience and knowledge of contemporary practice and scientific advances in all branches of cytology and related disciplines from a variety of cultural and clinical environments. Further detailed information is available at www.cytology2010.com. For specific enquiries email: cytology2010@meetingmakers.co.uk

Association of Clinical Pathologists’ Scientific Meeting
11–12 June 2009
Royal Institute of British Architects, 66 Portland Place, London W1B 1AD

11–12 June: Histopathology
Dermatopathology/Melanoma/Slide Seminars

Forensic Pathology 12 June
Examination of the skin in a forensic context

Plenary lecture 11 June pm
Dr B S Wilkins

Pathologists in Training session 11 June pm
CD45-P53-P60-P45-UB40: avoiding the dole for pathology trainees
Professor T J Stephenson

Poster presentations 11 June
Full programme information is available on the ACP website www.pathologists.org.uk or from ACP Central Office – telephone 01273 775700 or email jacqui@pathologists.org.uk

Healthcare Career Opportunities in Singapore

We are Singapore’s flagship hospital with a multi-generation and diversified workforce of over 6000 healthcare professionals from Singapore and 30 other countries. With 1400 beds, it is the largest acute tertiary hospital in the region offering 29 clinical specialities.

The Department of Pathology invites suitably qualified candidates for appointment as:

Anatomical Pathologist

The Department is a comprehensive diagnostic medical laboratory that handles about 35,000 surgical biopsies, 11,000 non-gynaecological specimens and 20,000 gynaecological cytology specimens per year. It contributes to post-graduate registrar training and provides opportunities for research.

Requirement:
- Candidates must possess basic Medical Degree and relevant post-graduate qualifications (such as FRCPath, FRCPA, American Board and equivalent) and completed specialist/residency training.

Successful candidates will be offered a 2 to 3 years renewable contract and can expect a competitive and attractive remuneration package depending on experience and grade of appointment.

Applications stating full personal particulars, educational and professional qualifications, career history, publication detail, present and expected salary, names of at least two professional referees, contact number, email address and a non-returnable photograph should be sent to the following address:

Chairman, Medical Board c/o HR - Medical Staff Services
SINGAPORE GENERAL HOSPITAL
167 Jake Bukit Merah, Toa Payoh, Singapore 599867
Fax: (65) 6275 1975
(e-mail) gpshhr@sphe.com.sg
(We regret that only shortlisted candidates will be informed)
Pathological Society of Great Britain and Ireland

The Pathological Society of Great Britain and Ireland offers several grant schemes, namely:

**SCHEME** | **DEADLINES**
--- | ---
Bursaries for undergraduate elective or vacation studies | 31 January, 30 April, 31 July, 31 October
Educational Grant Scheme | 1 April & 1 October*
Fellowships | 1 April & 1 October*
Intercalated Degree Grants | 1 March each year
Open Scheme | 1 March, 1 June, 1 September* & 1 December
Pathological Society Meetings Bursaries | 1 June & 1 November
PhD Studentship Scheme | 1 November each year
Small Grants Scheme (formerly Pilot Study Grant) | 1 April & 1 October*
Travel & Conference Bursaries | Open

*Please note these are new deadlines.

Full details are available on our website: www.pathsoc.org or from:
Miss Julie Johnstone
Deputy Administrator
Pathological Society of Great Britain and Ireland
julie@pathsoc.org

Association of Clinical Pathologists

Join the Association in 2009 and get these benefits:

- Receive *The Journal of Clinical Pathology* (monthly – either online or paper copy)
- Receive *ACP News* (quarterly), annual Year Book and Programme of Postgraduate Education
- Be part of a dynamic and progressive association dedicated to the development of clinical pathology
- Make your views known and influence professional and political decisions
- Attend high-quality scientific meetings (often with reduced rates for ACP members)
- Generous funding available for Travel Grants, Career Development Awards and Research Awards
- The ACP is a national nominating body for ACCEA.

**Subscription rates for 2009**

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All subscriptions are tax deductible.

Application forms can be downloaded from the Association's website: www.pathologists.org.uk or telephone ACP Central Office on 01273 775700 to request a form and further details.
The objectives of the College are to advance the science and practice of pathology, to educate the public in matters relating to pathology and to promote study and research work in pathology and related subjects and publish the result of such study and research. Financially, the College aims to match activities to projected income. The College is funded from subscriptions, examinations and related fees, investment income, grants from outside bodies and charitable donations.

As with other Royal Colleges, bequests or legacies are always gratefully received. Leaving a gift to charity in your will is a very special way of helping to secure the future for organisations such as The Royal College of Pathologists, for which you may have great affection and regard. Legacies to the College have the added benefit of being exempt from inheritance tax and this could reduce or eliminate completely any potential tax, which might otherwise be payable out of your estate. An open legacy may be made toward the general purposes of the College. This is preferred because it allows the College to apply the funds donated where the need is greatest at the time the legacy eventually becomes available. This can be quite different from the perceived need when a will is made. However, you may legally oblige the College to spend the money in a particular area of College work or for a specific purpose by making a restricted legacy.

Additions to your existing will can be made using a 'Form of codicil', printed in the Bulletin. Please note that witnesses should be present when you sign the form, but it should not be witnessed by a College member or the spouse of a College member. As a general point, we always recommend consulting a solicitor or qualified will-writer before making a will; they should give you all the legal and tax advice that you require.

If you are considering including a legacy to the College in your will, we would very much appreciate being informed of your generous act. To inform us of your bequest or for specific advice on legacies to the College, please call Daniel Ross, College Chief Executive, on 020 7451 6789 or email daniel.ross@rcpath.org

As you have read in this issue of the Bulletin, the College has now opened The Education Centre and we are delighted that our fundraising efforts have been so successful to date.

Construction of the bricks and mortar element of the new Centre is now complete at Carlton House Terrace – but importantly, the College is now planning for the future by developing the Outreach Programme that will spread the awareness of pathology throughout the UK and abroad.

In addition to the Outreach Programme, we will soon be in the process of putting together the second National Pathology Week, which will take place in November 2009.

No other UK college has committed so much to the future of our profession in terms of time and resources. This will begin to promote the importance of pathology to the grass roots of this country through schools, colleges, hospitals and many other sites where the general public can have access to important healthcare information.

If we are to safeguard the future of our profession in the face of increasing competition from other medical and science career opportunities, it is vital that we commit ourselves to the promotion and awareness of pathology, and continue to train our young professionals to the very highest standards.

The Education Centre and the Outreach Programme, including National Pathology Week, will require financial support from the College for many years to come and we hope very much that we can build upon the tremendous support you have already given and ask if you would consider leaving a legacy.

We have given regular updates on how to add a codicil to your will to assist us in this way, and if you would like additional information on will making, the following websites might be useful:

www.direct.gov.uk
www.bbc.co.uk
www.thewillsite.co.uk

For any further enquiries, please contact me.

Daniel Ross
Chief Executive
020 7451 6700
daniel.ross@rcpath.org

Legacies for outreach and educational work
Form of codicil

(Please photocopy and complete in block capitals)

I .................................................................(name) of ................................................................. ................................................................. (address) declare this to be a Codicil which I make this .......... day of .............. 20...... to my Will which bears the date .......... day of ..........(month) ........(year).

I give to The Royal College of Pathologists (‘the College’), registered charity number 261035, the sum of £.................. (amount in words) ................................................................. free of all taxes whether payable in the United Kingdom or in countries overseas for the general purposes of the College and I declare that the receipt of the Honorary Treasurer for the time being of the College shall be sufficient discharge to my executors.

In all other respects I confirm my said Will. In Witness thereof I have hereunto set my hand the day and year first written above.

Signed by the Testator/rix: ................................................................. (signature) as a Codicil to his/her last Will in our joint presence and by us in his/hers.

FIRST WITNESS: ................................................................. (signature of first witness)
Name and address: ................................................................. ................................................................. ................................................................. ................................................................. ................................................................. .................................................................

SECOND WITNESS: ................................................................. (signature of second witness)
Name and address: ................................................................. ................................................................. ................................................................. ................................................................. ................................................................. .................................................................
Road Traffic Fatalities
Passengers, pedestrians, pathologists and police
Friday 19 June 2009
(5 CPD credits)

To be held at
The Royal College of Pathologists
2 Carlton House Terrace
London SW1Y 5AF

In addition to considering the pathological aspects of road traffic deaths, this symposium will address the related legal issues that pathologists may face. The content will be suitable both for consultants undertaking coroners’ post-mortems and for trainees who will see the context in which this type of work is performed.

Registration:
Early/Online bookings*
RCPath Fellows £180
Concessions £90 (Trainees, Nurses, Retired, Students)
Non-members £230

Regular bookings
RCPath Fellows £200
Concessions £130
Non-members £250

*Early booking - one month prior to event date

Book online at
www.rcpath.org/conferences
Or contact Conference Department
Tel 020 7451 6740
Email meetings@rcpath.org

The Royal College of Pathologists
Pathology: the science behind the cure
National Pathology Week
2–8 November 2009

Pathology: the heart of modern healthcare

www.nationalpathologyweek.org

ruth.semple@rcpath.org
suzy.lishman@pbh-tr.nhs.uk
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