LabMedNews

Association for Laboratory Medicine

OCTOBER 2024

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- Interview with the Trainees' Committee vice chair, Annie Cook
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- Clinical immunology STP networking event

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Association for Laboratory Medicine

LabMed News ISSN 3033-3814

MESSAGE FROM THE CEO

Welcome to October's *LabMed News.*

VICTORIA LOGAN

Chief executive officer

The independent investigation of the NHS, led by Lord Darzi, has revealed that the NHS is in a 'critical condition' due to increasing waiting lists and a decline in public health. On the whole, the report has been welcomed by professional bodies, along with the government's focus on technology, primary care and prevention. Darzi's findings will inform the NHS's upcoming ten-year health plan.

For the Association for Laboratory Medicine, this report presents key opportunities as we develop our next five-year strategy including how we support members to develop skills needed to leverage advanced technology, such as machine learning and AI, to support the NHS to enhance its diagnostic capabilities and improve patient outcomes. Integration with primary care offers us a chance to help improve patient pathways, with faster, more accurate treatment and point-of-care testing. Additionally, our members will play a critical role in contributing to preventative healthcare by focusing on early diagnosis and supporting the government's emphasis on prevention.

It was also encouraging to see the emphasis on staff engagement with Darzi praising staff for their shared passion and determination to make the NHS better for our patients.

As an association, we know that collaboration is key to our members' ongoing development, and meeting face-to-face plays an essential role in fostering these connections.

With that in mind, November offers plenty of opportunities to meet with colleagues around the country including at our **National Audit Day** at the Royal College of Pathologists on 15 November 2024 in London. You can also join online as we offer this event as a hybrid option for the first time.

Trainees have their **annual meeting** the day before also at RCPath on 14 November with an afternoon session funded by Freddie Flynn. All members are invited to the free Freddie Flynn session including the Flynn lecture with additional speakers. Scotland have their **two-day, face-to-face meeting** on 21 November in Stirling.

Finally, we are recruiting some interesting roles to support the association's work, including deputy managing editor for Lab Tests Online UK. Find out more on page 13.

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LABMEDUK24 ABSTRACTS NOW PUBLISHED IN THE ANNALS

This year's conference supplement is now available for you to access online.

You'll find it as a 'supplementary material' link at the bottom of this editorial, written by Kath Hayden and Sarah Robinson, LabMed's president and director of events, respectively.

If you didn't manage to join us at the conference, you'll be able to catch up on all the highlights in this article.

You'll also be reminded to save the date for LabMedUK25, which will be held in Manchester at the Bridgewater Hall on 10-12 June 2025.

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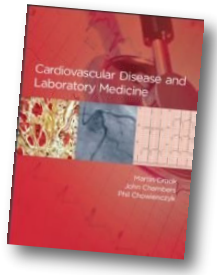
LABMED BOOK GIVEAWAY

For a limited time only, we're giving away our remaining stocks of the following textbooks, which are still useful in current clinical practice (condition: brand new; original price: ~ £30). Available in the UK only.

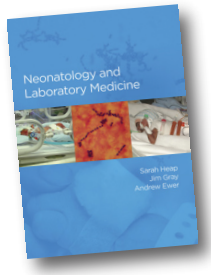
Cardiovascular disease and laboratory medicine



Martin Crook, John Chambers and Phil Chowienczyk (published 2015)

A synopsis on the use of the clinical biochemistry laboratory in the management of patients with cardiovascular disease. For clinical scientists, chemical pathologists, cardiologists, specialist nurses and other health care professionals in the cardiovascular field.

Neonatology and laboratory medicine



Sarah Heap, Jim Gray and Andrew Ewer (published 2017)

A guide for junior doctors, laboratory scientists and neonatal nurses on the identification and management of common neonatal problems. Provides brief background and discussion of the practical aspects of diagnosis and management.

Orders will be charged a flat fee of £5.50 per book to cover packaging and postage by staff. If you'd like to offer a donation for any requested book, please do let us know.

Contact enquiries@labmed.org.uk to order now while stocks last.

NATIONAL AUDIT DAY

15 November 2024

Join us at the Royal College of Pathologists, London or via streaming

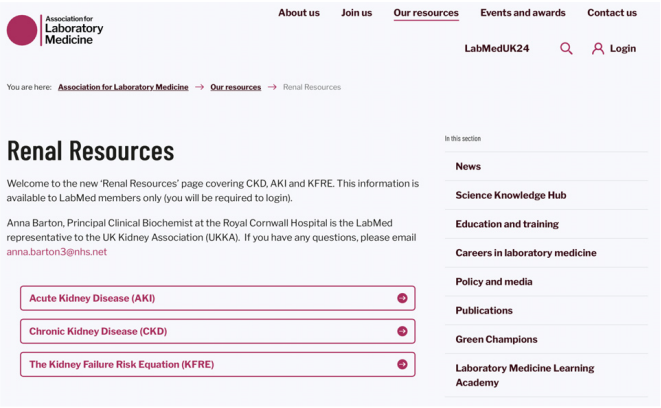
- National audit on diabetes
- Treatment updates and future therapies in diabetes
- C-peptide testing in diabetes
- National audit on Wilson disease
- Assessment and management of Wilson disease
- Abstracts and poster session

Book now at labmed.org.uk/audit2024

ACCESS NEW RENAL RESOURCES

Anna Barton simplifies renal guidance for LabMed

Find the latest recommendations for acute kidney injury (AKI), chronic kidney disease (CKD) and the kidney failure risk equation (KFRE) in our new 'renal resources' section on the LabMed website. Visit the 'science knowledge hub'.



ANNA BARTON

LabMed representative to the UK Kidney Association

The background

Concerning variation has been found in AKI detection in laboratories across England, including varying creatinine reference ranges and too few LIMS using the AKI algorithm that is required by NHS England.

The UK NEQAS 2022 audit revealed that 31% of respondents were still using the Jaffe creatinine assay and 47% using inappropriate eGFR equations. The KFRE is shown to be an accurate predictor of end-stage renal disease and many laboratories are currently setting up a new KFRE service. However, staff are in pressing need of guidance on how to deliver this, as very little has so far been published.

All of this goes on to have a negative effect on standardisation and patient outcomes, making it crucial that it's addressed.

Why this resource was created

There is a lot of guidance out there, but most is hard to find unless you know where it is. Then there's the question of whether what you're looking at is the latest information.

Through Anna's work bringing the clinical scientist's view to national renal guidance, she has created an incredibly helpful

and comprehensive hub of all the latest information our members need in their work. “KFRE is a good example. It’s in the NICE CKD guidance but there’s nothing on how to actually implement it”, says Anna.

The webpage

Creating this resource as a website allows for more flexibility and constant updating as needed. It’s also easier to access and use on the go.

It covers everything and is very specific for labs. Where guidance doesn’t exist yet (mostly the case for KFRE) Anna has sought out exactly what our members need to know by consulting with Rupert Major, consultant nephrologist and the UK lead for KFRE.

“Where there is no specific guidance, I asked Rupert for his opinion on what the laboratory should do in a certain scenario and other questions that biochemists have asked me.” In this way she acquired information that isn’t available to anyone else, and which is specifically tailored to our members’ needs.

LabMed rep for UKKA

Anna joined the Scientific Affairs and Clinical Practice Committee in 2019, at which time the UKKA requested the input of a biochemist for the work they were doing on AKI. Anna happily agreed due to her strong interest in renal biochemistry.

“It’s always changing and developing. It’s an area in which the lab has a big impact. When we’re reporting CKD, AKI and KFRE it’s important we get it right because obviously it’s going to have clinical impact and patient management impact.”

Her involvement snowballed quickly from AKI to CKD and then KFRE.

“It’s strengthening a new link between the biochemists and the nephrologists. We've done a few talks for the UKKA. They’re usually quite interested to get the biochemist’s point of view. It’s nice when you're able to input and have an impact on something.”

Policies need more clinical scientist input

A couple of years ago Anna worked on a NICE quality standard guideline after having been recommended by a contact in the UKKA.

“I read the guidance. They had a definition of AKI, but it was the clinical definition, and they were suggesting we (the lab) used that. It simply had not been written by someone with laboratory knowledge, even though it was a section about the laboratory service”. Anna was able to advise on how AKI is detected and reported by laboratories. “Now that I'm working with the UKKA, a lot more guidance has a biochemist’s input, so it makes more sense to us. Before, it didn’t necessarily transfer over to the practical everyday life in a lab.” Anna therefore finds herself inputting a lot on what is actually possible for laboratories, including raising issues such as the variation in age and capabilities of different LIMS.

The future of renal biochemistry

It’s vital that we continue to advocate for our profession’s needs, and an effective way to do this is through collaboration. “It’s fantastic to now be getting guidance when there has been collaboration and endorsement from different associations. They are more translatable and more practical to the laboratory service and have more oomph.”

Interestingly, Anna has also mentioned something even newer than KFRE looming on the horizon. LabMed is glad to have Anna representing our association and profession in this key area and we’re excited to see what further developments await us.

“It’s been a good few years and there’s plenty more to do. It never stands still.”

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WELCOME TO OUR NEW MEMBERS

The association is proud to introduce the following new members who have joined us since the last edition of *LabMed News*. Please extend a warm welcome to:

Rankiri Pathirananehelage Madhusha Madhumali Ruwan Pathirana, Honorary international fellow in chemical pathology, Freeman Hospital, Newcastle Upon Tyne

Jasmine Buck, HSST trainee clinical scientist, Frimley Park Hospital, Frimley

Nicholas Springall, Doctor, Ashford and St Peter's Hospitals NHS Foundation Trust, Chertsey

Subadra Wanninayake, Clinical research fellow in IMD, University Hospital Birmingham NHS Foundation Trust, Birmingham

Carole Rolph, Teaching fellow in clinical biochemistry, Lancaster University, Lancaster

Fiona Vaz, ST6 chemical pathology and metabolic medicine, Guy's and St Thomas' NHS Foundation Trust, London

Rehana Ayub, Senior clinical scientist, Hampshire Hospital NHS Foundation Trust, Hampshire

Togarika Timbe, Biomedical scientist, Royal Infirmary of Edinburgh, Edinburgh

Nang Kham Htwe, Doctor, Oxford University Hospital NHS Foundation Trust, Headington

Rachel Mauchlen, Chemical pathology registrar, NHS Greater Glasgow and Clyde, Glasgow

Matteo Hirushan Jayakody Arachchige, Student, University of Birmingham, Birmingham

Adam Pattinson, Trainee clinical scientist, University Hospital Coventry and Warwickshire NHS Trust, Coventry

Shan Sunny, Medical student, University of Leeds, Leeds

Jacob Betts, Trainee clinical scientist, University Hospital Plymouth NHS Trust, Plymouth

Charley Harrison, Trainee healthcare scientist, Cambridge University Hospital NHS Foundation Trust, Cambridge

Abdullah Nouri, Chemical pathology registrar, Guy's and St Thomas' NHS Foundation Trust, London

Riley McMahon, Trainee clinical scientist, Liverpool University Hospitals NHS Foundation Trust, Liverpool

Vineshykaa Ramesh Kumar, Resident trainee, Maulana Azad Medical College, New Delhi, India

Ciara DeBuitléir, Chemical pathology SpR, St James Hospital, Dublin, Ireland

Madhavi Nanthabala, Medical laboratory technologist, National University Hospital, Singapore

PUBLICATION DATE

LabMed News is published on the 15th of the month. To guarantee publication, please submit your article by the 15th of the preceding month (i.e. 15th November for the December 2024 issue) to: editor@labmed.org.uk

We aim to be as flexible as possible and will try to accept articles up to the 1st of the month to be published if space allows. Otherwise they will be held over to the next issue.

If we are aware that articles are imminent, this gives us more flexibility and we can reserve space in anticipation. If in doubt, please contact: Gina Frederick, lead editor, via the above e-mail.

GET INVOLVED WITH LABMED

We're looking for members to join us in the following roles. For more details, visit our website.

Deputy managing editor(s) for Lab Tests Online UK

We have an exciting new opportunity for you to develop varied skills while you contribute towards educating and empowering patients.

We're looking for deputy managing editors to join the Lab Tests Online UK board and assist our managing editor in ensuring that the website's content meets the needs of its audience.

With support, you'll be helping to oversee and refine content review processes, check edited content and seek patient feedback.

You don't need prior editorial experience, though we are looking for:

- Members of LabMed, IBMS or RCPath
- HCPC registration and band 8c or above for biomedical scientists
- Full FRCPath for clinical scientists and chemical pathologists

If you're interested in the role and meet the above requirements, we'd love to hear from you. Please send your CV to our publishing manager, Sahana Krishnan: sahana@labmed.org.uk

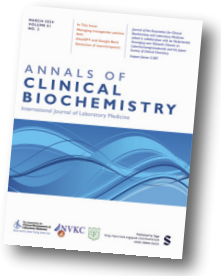
Learning Academy authors

If you're passionate about education, looking to build new skills and make a meaningful impact in the field, join our Learning Academy team.

The Academy is available to all our members, with a specific focus on aiding trainees preparing for FRCPath examinations. We're currently seeking writers for digital learning modules and for cases, offering an opportunity for those with less time who would still like to contribute. Compensation is provided for all successful candidates.

You'll have the support of the Learning Academy board, the Education Committee and the staff team every step of the way. For more information please contact our digital learning officer, Avi Surskas: avi@labmed.org.uk

ANNALS OF CLINICAL BIOCHEMISTRY LATEST RESEARCH ARTICLES



Check out this interesting new research article by C. Evans, F. MacKenzie and R. Marrington, recommended for reading by the editors-in-chief of the *Annals of Clinical Biochemistry:* Variation in liver function testing and the effect of pyridoxal-5-phosphate on ALT, AST and FIB-4 results.

Click here to submit your work to the *Annals of Clinical Biochemistry.*

PATIENT CENTRIC SAMPLING

THE FUTURE OF LABORATORY MEDICINE

Join us in Liverpool on 11 February 2025 for this LabMed hosted event exploring:

- patient needs
- policy/governance issue around alternatives to routine clinical sample collection
- procurement challenges within the NHS, and
- successful clinical pathways employing patient centric sample collection

Details to follow soon at labmed.org.uk

HEALTHCARE SCIENCE NETWORK; THE BENEFITS OF BUDDIES IN SCIENCE

KATY HEANEY

POCT speciality lead, consultant biochemist, Berkshire and Surrey Pathology services and chief healthcare scientist, Frimley Health NHS Foundation Trust

In January 2024 I began a secondment to the role of chief healthcare scientist at my Trust. This was a two-day a week, paid secondment that allowed me to backfill resource into my pathology team while I embarked on a journey of discovery into science beyond pathology. Healthcare science is the term used to describe all the disciplines in the four pillars of science in healthcare. For more information on this I recommend the National School of Healthcare Science website which provides a comprehensive list of the disciplines within the pillars and a quick guide to what the disciplines achieve for patients.

1. Life sciences
2. Physiological sciences
3. Physical sciences
4. Informatics

Lessons from being a chief healthcare scientist

My greatest lesson to date has been the extent to which our concerns and challenges overlap, with the nuanced edge of a discipline specific flavour. It is a role that brings a steep learning curve of language. If we thought we were guilty of too many acronyms in pathology, we can find relief in knowing this happens in all areas of the hospital, humbling me into having to ask the basic question, “Sorry what does that mean?” more often than I am comfortable with. It has brought the benefit of being part of, and learning from, executive conversations on workforce, quality and patient safety, and I hope to take the role into Trust level conversations on system transformation and supporting our new build hospital plans. I also note the benefit of networking with other chiefs such as pharmacy, therapies, allied healthcare professionals and radiology, all with similar experiences of being a forgotten service or side-lined or brought in at the last minute when change is required. Working together we are certainly stronger.

Trust Healthcare Science council

A couple of months into the role I set up our Trust Healthcare Science council with the leads from each discipline. One hour, once a month, on Teams. Our meetings have themed around accreditation, registration, workforce, apprenticeships and the challenge of navigating our electronic patient record. All the matters we discuss in pathology meetings are now widened to consider other disciplines. We have made steps forward as a group in Trust wide initiatives, for example engaging in the new national uniform roll out; in 2025 our patient facing healthcare scientists shall be in peacock blue and our non-registered staff in eau-de-nil with a view to supporting both patient recognition of our roles and internal recognition of our role. We have enabled regular patient feedback by getting every discipline their own Friends and Family test report; user feedback as we know in pathology is essential for accreditation.
We have recently been joined by a gastrointestinal physiology healthcare scientist, a new role to the Trust, currently the only one of its kind in our organisation. I was able to welcome them in and introduce them to a group of scientists they otherwise might have taken months to meet, if ever, given our multi-sited organisation.
The sense of belonging is a welcome benefit that, while I may not have put as our first objective of the council, has become a big win for the effort of it.

Why is belonging important?

Belonging, to me, is being seen, being heard, being valued and being safe. I want to feel that I belong in my organisation and feeling this way is more likely to result in me staying in post, looking for promotions within my organisation, rather than outside of it, and being more productive in my role. Belonging, for me, is a key part of retention of our staff.

I am interested particularly in how other staff groups support new starters, particularly those coming into their first qualified position or first senior role. Preceptorship, defined as a period of structured transition to guide and support newly qualified practitioners from students to autonomous professionals, is a programme that runs for nursing staff, nursing associates, midwives and allied healthcare professionals. Small scale trials and pilots of preceptorship programmes for healthcare scientists are being designed and set up, and I am sure would be welcome in both our small workforce groups, but I think also within pathology. Programmes centre around work on values and behaviours, focused on building confidence in the individual, and have been shown to lower sickness rates, improve retention and increase staff satisfaction and morale.
A group in Sussex (contact emily.clement@nhs.net) include the following in their multi-discipline preceptorship programme which, I think we can agree, applies beautifully to pathology and the aim of having a well-rounded staff member.

- Communication skills
- Reflective practice and lifelong learning
- Maximising safety
- Ethics, accountability and decision making
- Supporting inclusive practice
- Quality improvement and research
- Supporting students

Does my Trust have a chief healthcare scientist?

Regretfully the answer is not consistently yes! Neither is it consistently yes at Integrated Care System or regional level, although this is the ambition. The office of the chief scientific officer is actively working on raising the profile of these roles, the benefits they bring to both the healthcare science community and the NHS system in joined up working and service understanding. I must also mention the

work of Zoe Clarke, lead healthcare scientist at Barnsley Hospital, for setting up the community of practice for healthcare science leads, enabling shared practice and learning amongst this group.

I recommend if you have one, make contact. If you don't, think about who you could talk to about the need for one. There are examples of them as paid secondments and voluntary roles, but the latter is always limited in their ability to lean into the role due to commitments of their main role. Funding routes through education, retention initiatives, peoples promise work and diagnostic transformation should be explored. Example job descriptions are available on the NHS Futures community of practice pages.

Equality for healthcare science

One of the greatest injustices I have come across is on the allocation of central continuing professional development (CPD) funding. Nurses, midwives and allied healthcare professionals were allocated money per individual for CPD from central NHS England funding. While some regions have offered healthcare science funding it has been of a one-off nature, rather than ongoing, consistent funding that can be planned as part of a development pathway or permit the benefits from early bird discounts offered by many conferences and learning opportunities. This is in contradiction to the need for CPD to maintain up-to-date practice as stipulated in our professional registration with the Healthcare Professions Council. Indeed, 63% of healthcare scientists in England are HCPC registered and as such have a statutory obligation to maintain knowledge. Given our critical role in the integration of technology into healthcare and the demand to improve diagnostic services as reported by Lord Darzi and in all discussions about NHS reform, I believe levelling up this funding to include our profession is essential to the future of the NHS and improving patient care.

Healthcare Science networking at the South East Healthcare Science conference held at Chatham Dockyards in September

AN INTERVIEW WITH THE TRAINEES' COMMITTEE VICE CHAIR, ANNIE COOK

What is the Trainees' Committee?

The Trainees' Committee does exactly what it says on the tin really; we are a committee of trainees for trainees, and we volunteer our time to represent the voice of our fellow trainee members. The Trainees' Committee is made up of representatives from all the regions across the UK and Ireland and we also have representatives from the immunology and microbiology specialist committees.

What does the term 'trainee' mean to you?

In the context of LabMed, the term trainee relates to someone generally in a formal training position (like STP or HSST) or actively training towards their Fellowship exams. Ultimately, the spectrum of trainee members is really broad and encompasses individuals from the start of their training journey all the way through to Consultant, so the Trainees' Committee has an important role in trying to ensure we represent and advocate for all those individuals and their situations.

What has your own training journey involved and what would be your biggest piece of advice?

Well, I completed the STP back in 2020 and am just entering my fourth year as an HSST trainee (which is quite scary!). My own training journey has overall been a really positive one but has also been a lot of hard work! I have been fortunate to have completed a large project with the toxicology lab in Birmingham, to have founded and chaired the Surrey, Hampshire and West Sussex Healthcare Scientist Trainee Network (now the South East Trainee Network) and to have even spent five weeks in South Africa for my elective project. I guess my biggest piece of advice would be to just say yes to opportunities that come your way, and if you feel there aren't any – create them.

What do you see as being the biggest challenge facing trainees at the moment?

That's a big question and I think that there will be a variety of views depending on who you ask, but certainly my impression in recent times is that there is a huge challenge

Annie Cook

in terms of networking opportunities. For pre-registration trainees, they now have much shorter in-person university blocks as part of their training which I know for myself was such a formative part of my own training journey. In fact, our chair, Monika Jankute and I trained together and even shared accommodation when we attended Manchester for our university blocks! Additionally, I feel that the costs involved with attending in-person CPD and training events can be prohibitively expensive for trainees (and non-trainees) but particularly where the educational training support funding they receive through NHS England hasn't increased in line with inflation. Although saying that, I feel really positive about the role that LabMed can play in supporting trainee members with in-person events though grants such as the regional training bursary.

What do you enjoy most about being a part of the Trainees' Committee?

Obviously, I really enjoy spending time getting to know other committee members, but I also really enjoy being an *ex officio* member of other committees. In my role as Vice Chair, I sit on the LabMed Nominations Committee, the Royal College of Pathologists Trainee Advisory Committee and the LabMed Education, Training and Workforce Committee. These have provided me with a really fantastic opportunity to connect with and learn from some of the top leaders in our profession.

Is there anything you would like to suggest to others who are keen to get involved?

Just go for it! We are all busy people and have lots of work priorities to juggle, but it is a really important forum for ensuring the trainee voice is represented across LabMed, and a great experience which helps you build your own professional network and leadership skills.

Any available vacancies will be advertised on the LabMed website under the Get involved section. We would welcome members who are interested to apply. Myself and Monika are due to be stepping down from our roles in 2025 so watch this space if you are interested in taking on one of these roles – we will likely get the adverts out for these positions in the New Year.

I REMEMBER WHEN...

LOOKING BACK ON A CAREER IN PAEDIATRIC BIOCHEMISTRY

MICK HENDERSON

Honorary consultant clinical scientist, Specialist laboratory medicine, Leeds Teaching Hospitals Trust

Like many of my baby boomer generation I feel that I have been very lucky in life and in work. I was able to attend university without having to pay fees. I married young, as many of us did, and now have the joy of seeing my grandkids growing up.

My career in the NHS started with a basic grade biochemist post at Southmead Hospital, Bristol. My training was both in general clinical chemistry and the emerging specialty of paediatric biochemistry. The Southmead lab was an early leader in the specialty and was lead by the kind and wise John Holton. As a contrast to how things are now, in those days someone from the lab (I had a place on that paediatric bench rota), would have to visit the paediatric wards to collect the samples from babies using heelpricks and glass capillaries. Then, back in the lab complete all the analyses manually for sodium, potassium, urea, creatinine, bilirubin, calcium and glucose.

Able bodied female inmates at the Leeds Union Workhouse, c1900

After five years I moved to Leeds where I spent the rest of my career. Leeds did not have a children's hospital at that time, but did have the full range of paediatric tertiary referral services. These were closely associated with their adult counterparts although the children's wards were grouped together. An interesting debate that continued for years was between those paediatricians who felt strongly that there should be a separate children's hospital, providing a child-only environment, and those who wanted to stay close to the adult services, on the grounds that many of the advances and improvements to practice came from those bigger services. Eventually, the compromise was to have a children's hospital on the campus of a major adult facility.

The laboratory world has had similar debates, but in Leeds the paediatric samples (including neonatal) have always been processed by the main pathology facilities. Specialist paediatric labs have also arisen though, and I was very much involved in the creation of the biochemical genetics (BG) lab that now provides the regional neonatal screening service and a range of specialised tests for the diagnosis and support of patients with inborn errors of metabolism.

From first starting in Leeds, I made an effort to become a part of the paediatric department. It is one of the joys of our profession that we collaborate closely with clinical colleagues. This is not only personally rewarding but essential if we are to contribute to optimising patient care. It should also play a vital role in guiding the development of the laboratory. I was very touched to be invited to become a member of the Royal College of Paediatrics and Child Health.

One of the first things that we did as an emerging BG lab in Leeds in 1984 was to buy the region's first amino acid analyser. It was a Rank Hilger Chromaspek. The buffer programme was determined by a rotating steel drum partially covered by black tape which we could manipulate. A moving light source detected, by reflection, the presence of the tape and triggered valves. It needed a lot of patience to operate and get consistent results. But I had a superb partner in this venture. I had formed a friendship with Martin Smith, a Chief MLSO, who was looking for a new challenge at work having become a bit disillusioned with the increasing automation of the main laboratory. We built the service together over two decades and today's lab is a testament to that friendship and to Martin's scientific skills.

The laboratory was initially housed in a historic building at St James's Hospital. The site had been built by the Victorians and was originally The Leeds Union Workhouse. Our building, imaginatively called block 20, had been the infirmary. I don't think the outcome for most inmates at the time was very positive. The Victorian graveyard across the road, Beckett Street, has headstones that bear witness to the many who died young, including children and babies. The photograph of female inmates gives some idea of that environment. A print of this photo used to hang on the wall of the main automated lab in Block 20 and was a backdrop to our daily routines.

The early development of our BG laboratory relied heavily on charitable donations to fund equipment. Parent groups were particularly helpful and keen to support diagnostic progress. The Jimmies Association for Kidney Children, the JAKs, bought our first gas chromatograph mass spectrometer in 1990. This made our organic acid analyses much more powerful by providing accurate chromatographic peak identifications.

In 1999 we modernised the newborn screening laboratory using a grant from the Pathology Modernisation Fund. Myself and a former colleague, Rick Jones, were the applicants. Rick was a chemical pathologist with vision and superb IT skills. Sadly,

Dr Mick Henderson operating the molecular analyser

High-tech life-saver for babies

Publicity for our new gas chromatograph mass spectrometer in the *Yorkshire Evening Post*, 1990

he had an early death a few years after this. The application had been strengthened by our recent acquisition of a tandem mass spectrometer bought from the UK company Micromass, who were extremely helpful in establishing the bloodspot amino acid and acyl carnitine assays that would be vital for expanded newborn screening.
Mike Morris from Micromass came to our lab daily for many weeks until we were confident enough to strike out alone.
Also very important was a close working partnership with Lisa Farrar, scientist in charge of specialist haematology. Lisa had (and still has) an enthusiasm to initiate and improve newborn screening for sickle disease. The grant was crucial for funding the initial purchase of a semi automated bloodspot punch and new controlling software from Perkin Elmer Life Sciences, Specimen Gate. We became the European test site for a beta version of this software which mapped all analytical processes and linked results to the patient demographics through the bar coded number embedded in the bloodspot card. Revolutionary in its day!
We then pioneered the transmission of screening results electronically to Child Health Records Depts (CHRD) across Yorkshire. We used the Connecting for Health national electronic spine to mediate the communication in a Dept of Health funded project. This was intended to be a national pilot, but unfortunately failed to be rolled out because a rival system, Failsafe, looked more promising a few years later.

My strong memories of those times included the need for many collaborations with a range of professionals, midwives, nurses, CHRD staff and quality teams to make this all work and create a service that met national standards. And that continues to this day.

Laboratory collaborations have been essential for progress on so many fronts. It has been my privilege and pleasure to take an active part in many organisations. The ACB, obviously, has been a driving force for education over many years. We discussed this in an article for *ACB News* that Keir Bailey and I wrote in June 2023.

MetBioNet, which was largely the brainchild of Anne Green and Jim Bonham, gave rise to the first cohort of biochemical genetic HST trainees amongst many other good things. Many of those HSTs are now leaders of current laboratories.

ERNDIM (European Research Network for evaluation and improvement of screening,

Diagnosis and treatment of Inherited disorders of Metabolism), born of an EU grant in the early 1990s, is now unique internationally in its provision of EQA and education for biochemical genetics laboratories. ERNDIM collaborated with the Society for the Study of Inborn Errors of Metabolism (SSIEM) to create The Academy which I was involved with from the outset. This is an annual teaching course covering the basics of the diagnosis and management of IEMs. It has a 50:50 split of scientists and clinicians and is always over subscribed.

Not forgetting, of course, the Royal College of Pathologists, whose qualification is the motivation for so many of us to master the discipline. As an examiner for the College, I gained great insight into the effort that goes into enabling and supporting these qualifications.

There are many other organisations that I have been fortunate to work with which is only what you would expect from a lifetime of working for the NHS.

The last five years of my working life were made more interesting by having the honour of being invited to provide leadership to the internationally renowned Willink Laboratory in Manchester as well as to continue to run the Leeds BG lab. This came about because our two laboratories had always collaborated closely and the metabolic paediatricians based in The Willink Unit had for many years come across the Pennines to see Yorkshire patients in clinics in Leeds and Bradford. My invitation had been the initiative of the lead paediatrician at the time, John Walter. We became even firmer friends and continue to meet regularly in retirement, riding by motorbike to venues across Yorkshire and Lancashire for lunch.

One final thought that I'd like to share. At the start of this century it was clear that genetic testing was in the ascendency. There seemed to be every expectancy that this would eventually sweep aside most other forms of pathology testing. I was seriously asked by colleagues in genetics why I wasn't considering re-training because biochemistry had no future. Although, even at that time, I was not able to see the gene test that would help monitor disease. Advances in genetic testing have indeed revolutionised much of medicine and enabled diagnoses and treatments that would have been unthinkable 20 years ago. But, there has also been a growing realisation of the importance of Functional Genetic testing. That is all testing modalities that test the phenotype, including biochemistry of course. As our understanding of genetics has deepened so has an appreciation of its complexity. There are so many factors that contribute to disease expression, even for monogenic disorders. So testing the phenotype is increasingly recognised as critical. A whole issue of *The Journal of Inherited Metabolic Disease*, Feb 2018, vol 41;3, was dedicated to the importance of non genetic tests in the elucidation of genetic disease. Viva biochemistry!

In conclusion, I would like to stress again how much I value collaborations, between laboratories, between professions, between disciplines, with commercial partners and between countries. We achieve so much more when we work together.

John Walter with our bikes

LabTestsOnline

by
IAIN WOODROW
Deputy marketing lead, LTO-UK

As we told you in the summer, we have been celebrating our 20th anniversary this year. Things have changed an awful lot in the last two decades. From our point of view, how people access and use information is very different. Twenty years ago, Facebook and X (formerly Twitter) didn't exist, WiFi wasn't widely available and an AI was a type of South American sloth. More to the point, though people had mobile phones, they weren't "smart" (the first iPhone was another three years away), so ability to access information on the fly was all but non-existent. At the time, Lab Tests Online implied something different to how it might be perceived now, namely accessing information on lab tests when you were sat in front of a computer hard-wired up to an ethernet connection. Today, however, after the explosion of the availability of goods and services online, ordering of everything from food and clothes, to paying your utility bills, and facilities to book things like hospital appointments, that perception has shifted to potentially mean lab testing on demand. Certainly, queries received through our social media accounts tend to be about how to get serum X tested or from patients enquiring how to access their results.

As a result, we are taking a deep dive into our online presence, and how the site might come across to potential users. We have enlisted the help of an external company, William Joseph, to undertake some research into how effective the site is. Their preliminary report has made some suggestions on what we need to do to continue to make the site relevant and useful to patients in the modern, information-rich landscape. This includes the possibility of changing our name to make it more obvious what we are about.

It is still early days, but when we do make decisions, we may put it to a poll in the not-too-distant future. Some ideas have been suggested already, but we can assure you that Lab-Testy McLab Face will not be an option.

Contact us

Email: labtestsonlineuk@labmed.org.uk
Website: labtestsonline.org.uk

About us

Lab Tests Online-UK is a non-commercial website written by practising laboratory medics and scientists with lay editorial review of content to ensure its suitability. The aim of the website is to help patients and the public, including healthcare professionals, understand the many clinical laboratory tests that are used in diagnosis, monitoring and treatment of disease.

CLINICAL IMMUNOLOGY STP NETWORKING EVENT

STEPHANIE LABA
Trainee clinical scientist, clinical immunology, Tees Valley Pathology

STP trainees, training officers and clinical scientists from across the UK met on 12 June in Manchester for the annual Clinical Immunology STP Networking Event. The event offers a valuable opportunity for all the Immunology STP trainees across the different cohorts to meet and engage with each other and with clinical scientists at various stages of their careers. With a combination of presentations from trainees, as well as informal Q&A sessions with the clinical scientists, the day facilitated valuable discussions and exchanges between all attendees, and was an excellent opportunity to share experiences, gain knowledge and build connections with peers and colleagues within the specialism.

The large part of the event was devoted to the trainee presentations, which covered a wide range of topics and were of excellent quality throughout. From rare and unique case studies through to personal reflections on patient-centred decision-making in the Immunology clinic, all the talks sparked questions and discussion around the room. The value of calculated globulin was highlighted in two separate talks, in both the diagnosis of primary immunodeficiency and multiple myeloma, emphasising the importance of multidisciplinary approaches in the wider pathology laboratory. The talks also provided opportunity for students to share their research project findings, which included the validation of novel assays for Aspergillus precipitins and bradykinin, as well as evaluation of a CSF free light chains assay in the screening for multiple sclerosis. Technical errors encountered in the immunology laboratory were also a key theme in two of the talks, which created much discussion around similar experiences in different laboratories across the country and allowed for the sharing of ideas and strategies to best manage or overcome some of the challenges encountered.

The guest speaker for the day was John Grainger from the Lydia Becker Institute, who presented his latest research findings on the use of spectral flow cytometry in characterising the immune response following ischaemic stroke. Through high-dimensional immunophenotyping, his research group aims to predict and improve clinical

outcomes for patients. Dr Grainger's talk explored how spectral flow cytometry and UMAP plots are currently used to analyse and visualise complex datasets in basic research and offered us a glimpse into advanced techniques that could perhaps one day make their way into the clinical immunology laboratory.

In addition to the trainee presentations, two clinical scientists shared their experiences with the Higher Specialist Scientist Training (HSST) programme. Through a very entertaining talk they provided a comprehensive overview of what the HSST entails and gave practical advice on how to navigate some of the challenges that might be experienced during the programme. Their insights on the demands and rewards of the HSST, followed by a Q&A session with all the clinical scientists present, provided valuable guidance for those of us considering this advanced training route.

Later in the day, all the trainees participated in structured mentoring sessions with clinical scientists. These individual sessions offered a chance to reflect on and discuss our training, progression and career development in a confidential manner. I know that the trainees are very grateful for these organised sessions, giving the opportunity for them to raise any concerns or issues they might have and seek guidance and support as needed.

Following feedback from the previous year, an addition to the agenda for this year was a social event in the evening which was well received by students and clinical scientists alike. This provided further opportunity for the trainees to get to know each other in a more informal setting, to share information and training tips across the different cohorts and build those relationships across the whole clinical immunology network.

Overall, the event was a great blend of learning, discussion and networking. A big thanks go to Launch Diagnostics for sponsoring the event, and to Nick Barnes and Dan Payne for their efforts in bringing it all together and ensuring the day was a resounding success. The day is a definite highlight of the year for all clinical immunology STPs, and we can't wait until next year!

THE DIGGLE MICROBIOLOGY CHALLENGE

These questions, set by Mathew Diggle, are designed with trainees in mind and will help with preparation for the microbiology part 1 FRCPath exam.

Question 44

True or false.
Viruses may contain one of the following:

A) DNA
B) RNA
C) Glycoprotein
D) Enzymes
E) Cell wall

The answer to this question will appear in the next issue of *LabMed News*.

Question 43 from the August issue

Which of the following statements are true or false regarding viral infection of the central nervous system (CNS):

A) Meningitis cannot occur together with encephalitis
B) Enteroviruses are one of the commonest causes of CNS infections in childhood
C) PCR/NAT has no role in the diagnosis of CNS infections
D) Sequencing of the cerebrospinal fluid (CSF) can be a useful diagnostic test
E) The detection of antibody in the CSF is a poor diagnostic marker

Answers

The following are true:

B) There are a wide range of bacteria, fungi and viruses that can cause CNS infections in children, these include numerous viruses such as, enteroviruses, Herpes simplex virus (HSV 1 and 2) Varicella zoster virus (VZV), Epstein-Barr virus (EBV) and cytomegalovirus (CMV)

D) CSF nanopore sequencing as an example has been highlighted as a highly effective way to differentially diagnose encephalitis and/or meningitis.

The following are false:

A) Meningitis is an infection or inflammation of the area surrounding the brain and spinal cord (meninges) and encephalitis is inflammation of the active tissues of the brain again caused by an infection or an autoimmune response. Both can occur at the same time, although rare, and is called meningoencephalitis.

C) Polymerase Chain Reaction (PCR) or Nucleic Acid Tests (NAT) continue to play an increasingly important role in the identification and characterisation of infections within the CNS.

E) Tests to detect antibodies produced by the immune system against specific disease-causing pathogens may be useful and CSF samples tested for a range of different markers including antibodies is part of the diagnostic work up in acute and chronic inflammatory processes of the central nervous system.

DEACON'S CHALLENGE REVISITED

NO 33. ANSWER

Reproduced below are peak area data from an HPLC analytical run set up to measure plasma phenylalanine. The assay is used to monitor adequacy of dietary control in patients with phenylketonuria. Good control being regarded as maintaining plasma phenylalanine between 120 and 360 µmol/L.

N-methyl L-phenylalanine has been used as the internal standard. 200 µL of internal standard has been added to 200 µL aliquots of samples and standards prior to analysis.

Standard concentration = 500 µmol/L

N-methyl L-phenylalanine (NMP) concentration = 100 µmol/L

QC target: 180-210 µmol/L

Sample	Peak area	
	NMP	Phenylalanine
Standard	20,000	81,000
QC	22,000	35,000
Patient	21,000	140,000

a) Is the assay in control?

b) What was the patient's phenylalanine concentration?

c) What comment would you make about the patient's control from this result?

First calculate the peak area ratio (PAR) of the phenylalanine peak to that of the internal standard (NMP) for the standard, QC and patient:

$$\text{PAR (Standard)} = \frac{81{,}000}{20{,}000} = 4.05$$

$$\text{PAR (QC)} = \frac{35{,}000}{22{,}000} = 1.59$$

$$\text{PAR (Patient)} = \frac{140{,}000}{21{,}000} = 6.67$$

Assuming that PAR is proportional to concentration (i.e. ratio of PAR to concentration is constant):

$$\frac{\text{PAR (standard)}}{\text{Conc (standard)}} = \frac{\text{PAR (unknown)}}{\text{Conc (unknown)}}$$

Which can be rearranged to give:

$$\text{Conc (unknown) (µmol/L)} = \frac{\text{PAR (unknown)} \times \text{Standard conc (500 µmol/L)}}{\text{PAR (Standard)}}$$

a) Calculate the phenylalanine conc in the QC from the PARs:

$$\text{QC phenylalanine conc} = \frac{1.59 \times 500}{4.05} = \textbf{196}\ \text{µmol/L}$$

which falls well within the target range of the QC (180-210 µmol/L) indicating that the assay is **in control**.

b) Calculate the patient's phenylalanine conc from the PARs:

$$\text{Patient phenylalanine conc} = \frac{6.67 \times 500}{4.05} = \textbf{823}\ \text{µmol/L}$$

c) The patient's phenylalanine of 823 µmol/L is well above the target range of 120-360 µmol/L, indicating **poor dietary control**.

Question 34

It is suspected that the glucose results obtained with a POCT device on the ward are positively biased. One of the investigations into the problem involves analysing a series of blood specimens on both the POCT device (A) and an analyser in the laboratory which measures whole blood glucose (B), with the following results:

Specimen	A	B
	Blood glucose (mmol/L)	
1	4.5	4.2
2	6.8	7.0
3	3.2	2.8
4	5.8	5.6
5	8.9	8.7
6	9.5	9.7
7	4.8	4.9
8	7.3	6.8
9	5.1	4.6
10	7.8	7.7

Do these results support the suspicion of bias?

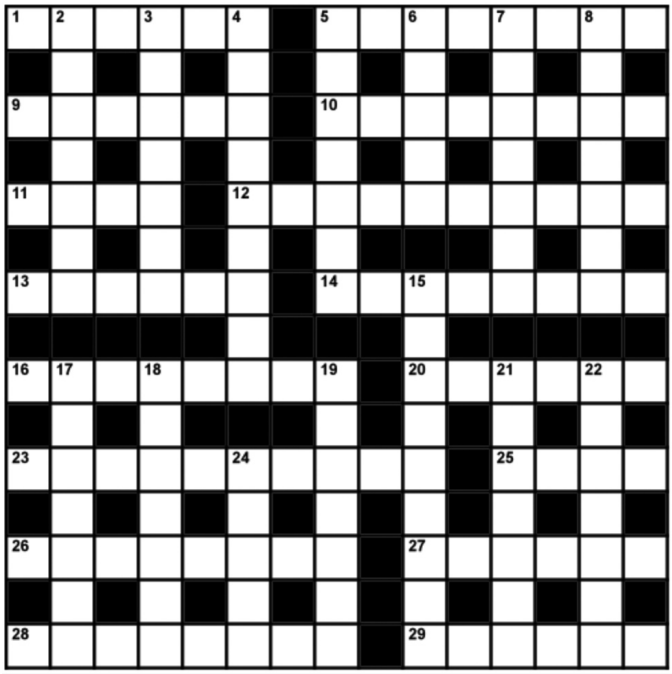
THE CROSSWORD BY RUGOSA

Across

1 Metal from central Panama (6)
5 Failed at organisation of related records (4,4)
9 Reports 1 with charge of riotous action (6)
10 Cystic fibrosis testers' set wears out? (8)
11 "Ancient Mariner" back in stock at last (4)
12 Endocrine syndrome made calmer with yoga (10)
13 Make secure recovery (6)
14 Left out acclaimed eccentric intellectual (8)
16 Ends up in smoke at a plane disaster (8)
20 Signed out unregistered duct (6)
23/28 Clinical result of self over-treatment could be kinky ill melodramas (4,6,8)
25 Party hands (4)
26 A method for 19 could start out from a basic soy mixture (8)
27 In short, I redesigned new edition, went off (6)
28 See 23
29 Strength of many difficult clues (6)

Down

2 Operation leader times a tardy group (7)
3 Stupid 27 lost direction, was confused, had spasm (7)
4 Element manages in French revolution (9)
5 Clinically difficult passage about unknown radius (7)
6 Physical unit of weather measurement (5)
7 Exhaust damage from repeated stress (7)
8 Traditions equivocate about German spirit (7)
15 Two bends in minimal construction of metal (9)
17 Activity of US soldier involved Italy (7)
18 Embarrassing charge after a short week (7)
19 A neatly modified component we determine (7)
21 Conceals information upsetting second England opener (7)
22 For ever late up admitted Eric's partner (7)
24 Used for roping wild stallions, lint-free (5)



SOLUTION FOR AUGUST'S CROSSWORD

SUDOKU ... THIS MONTH'S PUZZLE

T				M				R
	M		T				H	
		I		Y		C		
			R		T		S	
C		E		I		T		Y
	T		Y		H			
		M		T		S		
	R				M		E	
H				S				C

SOLUTION FOR AUGUST

C	S	M	H	T	R	Y	E	I
I	H	Y	S	C	E	M	T	R
T	R	E	Y	M	I	C	H	S
Y	I	T	M	E	C	R	S	H
R	M	S	T	I	H	E	Y	C
H	E	C	R	Y	S	I	M	T
S	Y	R	I	H	M	T	C	E
E	T	I	C	S	Y	H	R	M
M	C	H	E	R	T	S	I	Y

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