LabMedNews

Association for Laboratory Medicine

FEBRUARY 2026

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- Paediatric laboratory network updates – ranges, screening and sample types

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Association for Laboratory Medicine

LabMed News ISSN 3033-3814

MESSAGE FROM THE PRESIDENT

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President

As we move into 2026 and another busy period for the Association for Laboratory Medicine, this issue of *LabMed News* reflects the breadth of activity across our community – from policy and professional development, to education, events and member achievements.

We share the latest progress on EuroMedLab27, alongside a second position statement focused on funding for training – an area that remains critical to the sustainability of our workforce. I would also like to thank everyone who took the time to complete the recent Members Survey; your feedback is invaluable in helping shape our priorities and future direction.

Opportunities for recognition and involvement feature strongly this month. We are promoting the Advancing Healthcare Awards, encouraging members to showcase innovation and impact, and advertising our membership awards. We are also issuing a call for applicants for the president-elect role, as well as welcoming new regional chairs and continuing recruitment for trade union regional representatives. These roles are vital to ensuring strong representation and advocacy for our profession and I'd be more than happy to discuss any of these roles personally with potential applicants.

Education and training continue to be central to LabMed's work. This issue includes news on upcoming guidance validation work, endorsements of new learning platforms and a growing programme of training webinars. Preparations for LabMedUK26 are well underway, with bookings open, abstracts closing soon and a spotlight on both our main speakers and the new patient-centred workshop. I would also like to highlight the bursaries which are available. Applications for these are likely to be more successful if you are contributing in some part to the meeting, so please think about that research, quality improvement project or case you were involved in, and get your poster abstracts submitted!

You will also find updates from our committees, regional news and a range of meeting reports highlighting the energy and expertise of our members across the UK and beyond. Our Member Spotlights reflect the diversity of career pathways in laboratory medicine and celebrate those who contribute their time, leadership and insight to the Association.

Finally, I would like to recognise significant milestones within our community, including retirements and new appointments, and to thank all those who continue to support LabMed's work through collaboration and participation.

As always, I hope you find this issue informative and engaging and I encourage you to get involved where you can.

PARTNERSHIP WITH THE LEARNING LAB FOR LABORATORY MEDICINE

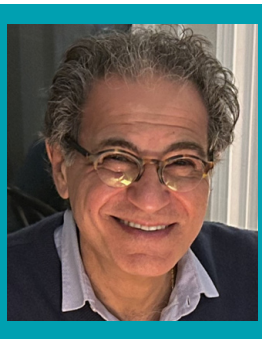
LabMed is very pleased to announce a new partnership with the Learning Lab for Laboratory Medicine to better promote this programme to our membership. This will work in parallel with our own Learning Academy. The Learning Lab works quite differently to the Learning Academy, which focuses on specific UK-based learning objectives; it is an AI-driven and a multi-lingual educational programme in laboratory medicine that is based on the concept of personalised learning. This programme has been endorsed by the IFCC and is provided free of charge to individual users to eliminate financial barriers and help promote equity in the availability of educational resources which is one of the current objectives of LabMed. In summary, this programme:

1. Contains more than 130 advance courses and over 100 additional courses that are specifically designed to meet the needs of practising medical laboratory specialists. The courses are curriculum-based and span across all disciplines of laboratory medicine including clinical chemistry, haematology and coagulation, clinical microbiology, transfusion medicine, clinical immunology and laboratory genomics as well as a section called general laboratory medicine that covers topics of common interest such as statistics, machine learning, biochemical calculations, lab safety, quality control, leadership, etc.
2. Courses are updated every three years, as expected of a viable continuing medical education programme.
3. The entire programme is being translated to 11 languages and dialects to increase its dissemination around the world; 600 translated courses have already been released.
4. Developed by over 500 laboratory medicine professionals from 42 countries, all are volunteers.
5. Used by over 9,000 people from 156 countries.
6. A certificate can be obtained upon the successful completion of a course and a continuing education credit may be obtained from IFCC.

We encourage you to take advantage of this free and valuable resource. Registration is very simple and takes only a minute. We hope you find the programme beneficial to your professional development and growth.

ifcc International Federation of Clinical Chemistry and Laboratory Medicine

Nader Rifai is a professor of pathology at Harvard Medical School, The Orah S. Platt chair in laboratory medicine and director of clinical chemistry at Boston Children's Hospital. He served as the editor-in-chief of *Clinical Chemistry* for 15 years and founded the Clinical Chemistry Trainee Council. Nader is the senior editor of *Tietz Textbook of Laboratory Medicine* and the co-editor-in-chief of the Learning Lab for Laboratory Medicine. He served as the chair of the IFCC Education and Management Division and is currently the president-elect of the organisation.



APPLY TO BE OUR NEXT PRESIDENT ELECT

LabMed is looking for its next president elect – a chance to help shape the future of laboratory medicine at a really exciting time for the Association.

As president elect, you will join a four-year leadership journey (one year as president elect, two as president and one as past president), working with Council, the Executive Board and the staff team to lead LabMed's strategy, support members and raise the profile of our profession. You will also help prepare for EuroMedLab in London in 2027, putting UK laboratory medicine centre stage internationally.

You can apply if you are an active LabMed member of at least three years' standing. You do not need to have held an elected role before – what matters is that you can think strategically, work collaboratively and bring energy, clarity and vision to the role.

We are especially keen to hear from members passionate about leadership development, digital capability, workforce growth and expanding LabMed's influence.

How to apply

Read the full description online and fill out the application form. We will need your CV and a short statement (up to 500 words) covering your experience, your understanding of LabMed and your vision for its future.

Key dates

- Apply by: **20 March 2026**
- Interviews (London): **30 April 2026**
- Start as president elect at the AGM: **11 June 2026**

If you would like an informal chat about the role before applying, just get in touch – we'd be very happy to talk it through.

MENTAL WELLBEING

11 February marked the International Day of Women and Girls in Science.

Established by the United Nations (UN), this day recognises the importance of gender equality in STEM and encourages more women and girls to pursue careers in science and technology.

This is an opportunity for LabMed Members to:

- **Promote gender equality** across scientific fields and leadership roles
- **Celebrate achievements** by highlighting the contributions of colleagues in research, technology and innovation (visit our LinkedIn and Instagram to tag a friend or colleague)

- **Inspire future generations**, by sharing LabMed resources which are open access, such as LabTests Online and podcast episodes to learn more about laboratory medicine.
- **Advocate for inclusion** and equal opportunities in science.

NOMINATE SOMEONE AMAZING FOR OUR 2026 MEMBERSHIP AWARDS!

Do you know someone who has made an outstanding contribution to laboratory medicine? Nominations are now open for this year's Membership Awards.

Nominations must be endorsed by the relevant Regional Committee and formally submitted through that committee to Council at the May 2026 meeting.

If you wish to propose a nominee, please contact your regional secretary in the first instance. Alternatively, you may contact the membership manager, Mike Lester, for guidance.

Regional Committees are invited to submit nominations accompanied by a short citation (approximately 500 words) outlining the nominee's contribution and explaining why they merit recognition.

Deadline: 23 April 2026

Council approval: May 2026

Emeritus membership

Emeritus membership is a special honour for those who have been part of the Association for at least ten years, have retired from full-time work and have made an outstanding contribution to our mission.

Fellow of the Association

Becoming a fellow of the Association is a prestigious honour, recognising long-standing members who have retired from full-time work and made a significant impact on the profession. To be considered, members must have at least ten consecutive years.

Fellows have made outstanding contributions in areas such as:

- Leading and driving change in laboratory medicine services at a regional or national level.
- Creating exceptional education and training opportunities for the profession.
- Establishing and developing a respected specialised service with a major impact.
- Raising awareness of the profession within the wider healthcare community over many years.

Honorary membership

Honorary membership is awarded to individuals who have made an outstanding contribution to laboratory medicine on an international level.

Let's celebrate the incredible individuals who have shaped our profession – get your nominations in.

ADVANCING HEALTHCARE AWARDS 2026 NOW OPEN

The Advancing Healthcare Awards 2026 are a brilliant opportunity to showcase the incredible work happening across laboratory medicine and we'd love to see more LabMed members putting themselves forward.

These national awards celebrate healthcare scientists, allied health professionals and those working alongside them across the UK. They're not just about winning; they're about visibility, pride and recognition for you, your team and your service. Awards like this are a great way to raise the profile of clinical scientists and help showcase the real impact of your work to a much wider audience.

LabMed is proud to be a special supporter of the awards for the third year running, including nominating a representative to sit on the judging panel.

Shortlisted teams are invited to attend the awards ceremony and lunch in London – a fantastic networking opportunity and a chance to be inspired by the innovative work happening across the sector.

If you've delivered something you're proud of, this is your moment.

Closing date:
Monday 16 March 2026.

UPCOMING EVENTS

LabMed Scotland Online Meeting and AGM

11 March 2026, 1.30pm-4.15pm

Join us for an engaging afternoon bringing together professionals from across Scotland and beyond to explore the future of sustainable laboratory medicine.

This year's virtual meeting programme features inspiring talks on the progress of green healthcare initiatives, national sustainability leadership and a real-world journey toward EFLM accreditation.

The meeting is open to all members but will be followed by the LabMed Scotland AGM 2026 which is open only to members from Scotland.

Further details can be found here.

LabMed Republic of Ireland Online Meeting and AGM

20 March 2026 9.30am-2pm

Agenda to be confirmed.

The meeting is open to all members but will be followed by the LabMed RoI AGM 2026 which is open only to members from the Republic of Ireland.

Further details can be found here.

Examiner and trainee perspectives on FRCPath part 1 and 2 exams

from 25 March 2026, 4pm-5pm

The first in a series of Microbiology webinars aimed at those in infection training at all levels. The webinars will be running on the last Wednesday of each month from 4pm to 5pm, starting from March until November 2026.

These webinars will be free for members and non-members so please share to anyone to whom they may be of interest.

Further details can be found here.

The digital landscape in laboratory medicine: current systems, future possibilities

130 April 2026, 10.00am-4.00pm

This meeting will explore how laboratory IT supports clinical decision-making, demand optimisation and safe, effective service delivery and how systems can be configured to maximise clinical value. The meeting will help give attendees the knowledge and confidence to engage with current digital systems and future developments.

Further details can be found here.

MEMBERSHIP SURVEY 2025

MIKE LESTER, MEMBERSHIP MANAGER

Firstly, a huge thank you to all who responded to our membership survey in the summer. It was great to see such a high level of engagement and your responses are already being explored across LabMed, including recently at Executive and Council, the Education and Training Committee and Publications Committee to name a few.

Our expertise, science and leadership

On analysis of the free text responses to what members consider to be our two main strengths, overwhelmingly this was the Members themselves and most notably their expertise and scientific excellence (absolutely!), followed by leadership and our collaborative approach and collective voice.

What are the biggest opportunities in the next five years? AI and digital transformation came out top followed by advocacy and visibility, and workforce development and training.

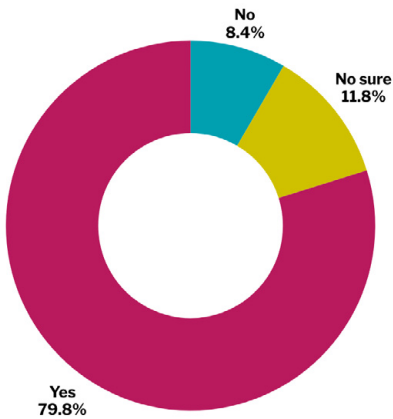
Free text responses to the question 'What are your biggest current professional development needs?', gave two clear frontrunners – leadership and management and AI and digital akills.

This all perfectly aligns with our new five-year strategy and its key themes of digital readiness, standards and guidance, visibility and leadership and workforce development.

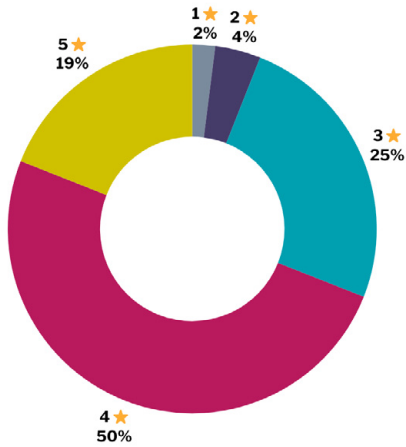
We asked our members who are currently practising health professionals in laboratory medicine whether they consider themselves to be a leader or potential leader to which 79.8% said yes.

Whether in the setting of NHS Trusts, UKHSA, private sector, academia or industry, or nationally and internationally, our role in bringing different areas of the profession together and our strong member base is an excellent asset for building a positive future.

Do you see yourself as a leader or potential leader in your field?



How do you rate your overall experience with the Association for Laboratory Medicine (LabMed)?



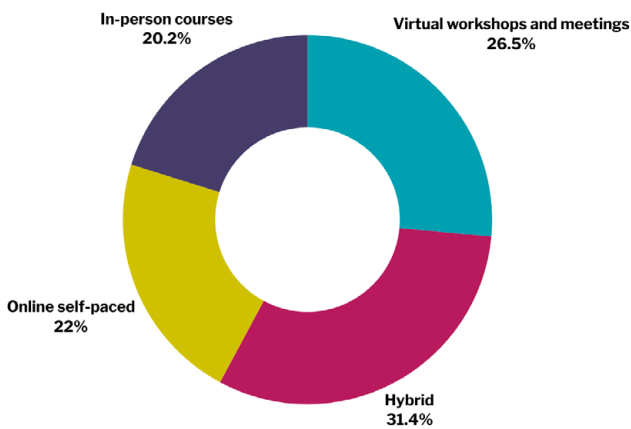
Is there still room for improvement?

Yes, of course. These remain difficult and uncertain times for us all and whilst we are delighted to see over 69% of respondents rate their experience with the Association as four or five stars out of five, this still leaves us with room for improvement.

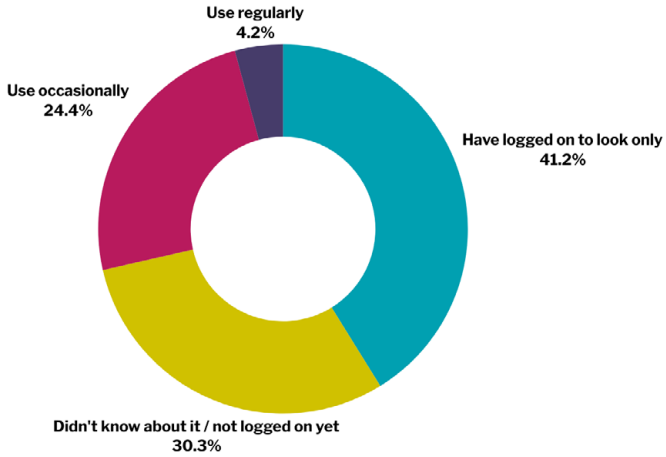
The usefulness of our scientific resources scored well (average rating of 3.44 out of 4), as did our training courses (3.37/4), regional events (3.26/4) and LabMedUK conference (3.23/4), it feels right to focus some additional efforts on our new projects such as the outputs of our new AI specialist interest group and the Learning Academy (2.86/4) and areas of professional support including, the Trade Union (2.96/4) and Mentoring Programme (2.71/4).

Don't forget the Learning Academy, Mentoring Programme and Trade Union are included in your LabMed membership at no extra cost!

How would you prefer to access skills training?



How often do you currently use LabMed's Learning Academy?



Laboratory Medicine Learning Academy

Our Learning Academy is a great resource for members, containing specifically commissioned curated content designed specifically to meet our members' needs.

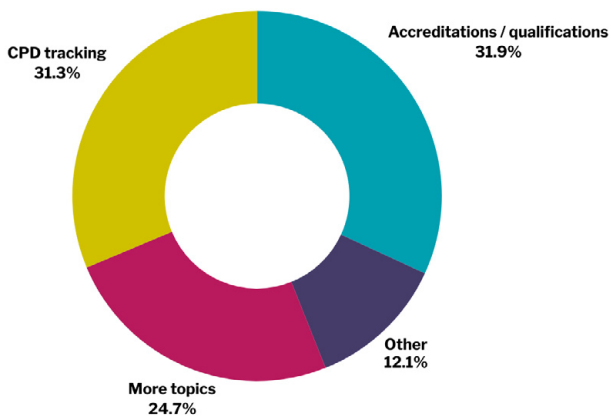
This is growing gradually and we enter an exciting new phase in Spring 2026 where we hope to attract many new learners. You receive access automatically as part of your membership and I urge you to take a look.

Digital tools

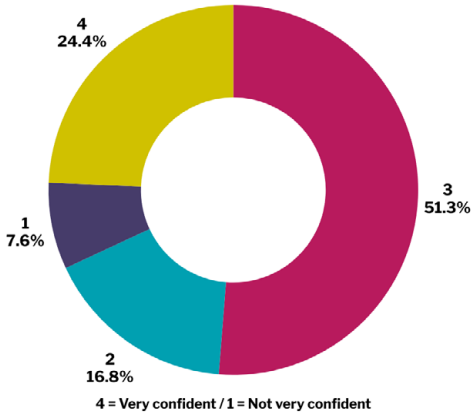
This area saw our biggest response rate in the survey (almost everyone entering the survey responded to these questions!)

It was interesting to see how confident members feel using digital tools (e.g. LIMS, data analysis software, AI), with over 75% stating they feel confident or very confident (over 29% stating very confident!). Free text responses in this area also gives us a steer for what types of upskilling members would like to have

What would encourage you to use it more?



How confident are you in using digital tools (e.g. LIMS, data analysis software, AI) in your current role?



available in this area including coding/use of R, statistics, informatics/bioinformatics, creation or real time apps and more to explore.

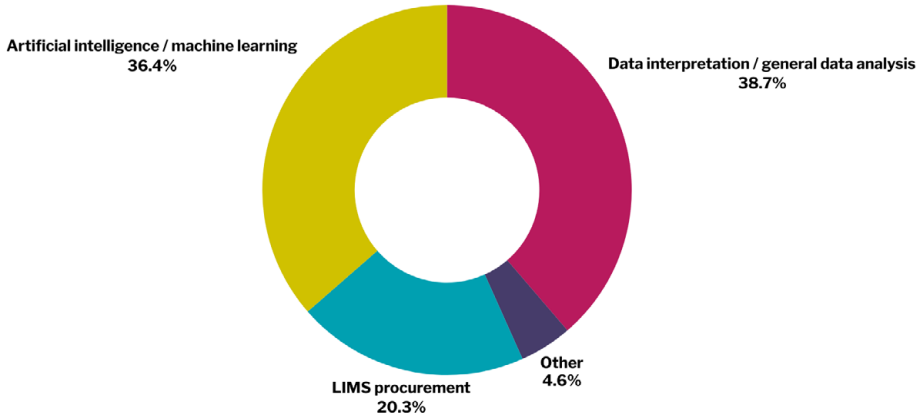
Our new specialist interest group will be working closely with the staff team, members of Council, the Education and Training Committee, Publications Committee and more to explore further how we can best support members in this area with the above in mind.

Thank you!

The Association is nothing without its members. An extraordinary amount of time and expertise is given willingly in the pursuit of a better healthcare environment and with your steer we look to harness that in the best ways possible.

Don't forget there are always opportunities available to Get involved.

What specific digital skills or technologies would you like LabMed to offer training in?



CALL FOR VOLUNTEERS TO WRITE ANALYTE MONOGRAPHS

AMALCs (Analyte Monographs alongside the National Laboratory Medicine Catalogue) are a comprehensive summary of laboratory medicine analytes written in a specified structure. The intended purpose is to provide a detailed summary of the nature and use of individual assays, providing both clinical and analytical information for laboratory staff and service users. They include a description of the analyte and details of analytical methods, uses, causes and follow-up of abnormal results, and any guidelines and systematic reviews.

There are currently 58 monographs listed on the LabMed website, and a number in progress, but the list is by no means complete and there are some significant gaps. Many of the original monographs also need reviewing with up-to-date information.

We are also keen to expand this list to include cross-discipline analytes and to other specialties such as immunology and haematology. They can be found on the Science Knowledge Hub here: Analyte Monographs.

We would encourage members of all grades to contribute to this project. It is an excellent activity for trainees to get involved with and a great revision exercise. They are an educational activity and attract five CPD points. More importantly, they are peer-reviewed and can therefore be included in publication lists on CVs.

LabMed will be launching a new learning platform this year, so the time is right to revitalise this valuable resource.

If you wish to write an analyte monograph, or review one of the existing monographs, and require a 'Writer's Pack', or for any further information, please do get in touch via email.

Gina Frederick AMALCs editor-in-chief

TELL US YOUR STORY...

This is a new article series on pages 16-20 in which we spotlight members and we hope that these inspire and inform other members.

Do let us know if you like the series and please get in touch if you know of anyone with an interesting story that might benefit other members.

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:

Abdullah Al Masri, Chemical pathology and metabolic medicine registrar, University Hospitals of Liverpool Group, Liverpool

Rwiti Banerjee, Chemical pathology registrar, University Hospital of Wales, Cardiff

Emmie Beckitt, Trainee clinical scientist, Hull Royal Infirmary, Hull

Rachel Bourne, Trainee clinical scientist, Royal Berkshire NHS Foundation Trust, Reading

Manas Dave, Clinical research fellow, Wellcome Sanger Institute, Cambridge

Rory Elmy, Trainee clinical scientist, Royal Victoria Infirmary, Newcastle

Eilidh Foggo, Trainee clinical scientist, NHS Lothian, Edinburgh

Margita Geiger, Lab MD, MVZ Labor Ravensburg, Ravensburg, Germany

Mohammad Javed, Biomedical scientist, Frimley Health NHS Foundation Trust, Camberley, Surrey

Phillipa Knaggs, Specialty trainee in chemical pathology and metabolic medicine, York and Scarborough Teaching Hospitals NHS Foundation Trust, York

Daniel Mackenzie, Trainee clinical scientist, Nottingham City Hospital, Nottingham

Samuel Nolan, Trainee clinical scientist, Belfast Health and Social Care Trust, Belfast

Onyedikachukwu Edwin Okpala, Trainee clinical scientist, Royal Lancaster Infirmary, Lancaster

Thomas Straton, Trainee clinical scientist (biochemistry), New Cross Hospital, Wolverhampton

Máté Udvardi, General physician, Szent Lázár Megyei Kórház, Salgotarjan, Hungary

Students

Jocelyn Chan, University of Edinburgh, Edinburgh

Roberta Dunn, King's College London, London

Ifrah Imran, The University of Chenab, Gujrat, India

Aisha Nor, London South Bank University, London

FUTURE PERSPECTIVES COLUMNISTS WANTED!

Would you like to contribute to our Future Perspectives column? The *LabMed News* team is looking for volunteers to help write content for the Future Perspectives column to assist our current columnists.

If you have an interest in new developments within our profession or the wider scientific community, or are actively working on projects that will significantly impact pathology, or simply wish to highlight good practice and would like to share your story with our readers, please do get in touch. You can contact us either via the LabMed website or directly by emailing the editor, Gina Frederick. We look forward to hearing from you.

MEMBER SPOTLIGHTS

FROM BMS TO FRCPATH

Kade Flowers started his professional life as a BMS and went on to become a clinical scientist in biochemistry. Having completed his FRCPath, last year Kade was welcomed as a fellow into the Royal College of Pathologists.

What (or who) inspired you to choose this career path?

I knew I wanted to work in healthcare or science when I was 10 and obsessed with *Gray's Anatomy* (definitely not because of Dr McDreamy . . .) and *Brainiac: Science Abuse* (yes, explosions!). I did some work experience with doctors when I was in sixth form (16 years old) and discovered that being a doctor may not be the best option for me after I passed out watching real maxillofacial surgery and woke up to the surgeon saying, "Oh dear, perhaps medicine isn't for you chap". However, I still knew I wanted to merge my interest in science and healthcare. A college careers tutor recommended biomedical science to me. I did some digging, applied to some universities, had some heartbreaks, struck gold, and here we are 13 years later!

Why did you do the STP to become a clinical scientist after completing training as a biomedical scientist?

Before being exposed to a real laboratory, I honestly thought the role of all laboratory scientists was that of a clinical scientist. It was not until I did my placement year in an NHS biochemistry laboratory that I realised the roles are slightly different and have a different focus regarding everyday duties, although these roles have significant cross over in reality. For example, clinical scientists tend to be more interpretive, developmental and clinically focused and biomedical scientists tend to focus more on technical service delivery. I therefore knew that I wanted to go down the STP route after finding out it existed during my placement year, and the opportunity to be paid to complete a fully funded Master's degree could not have been turned down.

What does your role involve on a day-to-day basis?

My day-to-day varies significantly, which I love. Some days I am the duty biochemist which involves answering clinical queries and responding to advice and guidance requests in the Electronic Referral System. Other times I support the authorisation rota for the paraprotein screening and monitoring service, first trimester screening and other manual tests including renal stone analysis, sweat testing, porphyria screening, etc. My role also involves training trainee clinical and biomedical scientists and general senior supervision in the lab. I also occasionally join the total parenteral nutrition ward rounds to advise clinicians on appropriate testing and replacement for these patients.

What is the most rewarding part of your job?

It sounds a bit mundane, but honestly, I really love thinking of improvement projects and changes, planning them, implementing them and assessing how they have improved some aspects of patient care. I also really enjoy being the duty biochemist and providing advice and guidance where my knowledge can really help clinicians investigate patients appropriately, whilst also importantly avoiding over investigation. I have also written multiple review papers and case studies that have fortunately been published, and it is very rewarding knowing that I may have helped somebody understand a difficult topic and contributed to the general knowledge pool in the literature.

What is one project or achievement of which you are most proud?

This probably sounds cheesy, but I think my proudest achievements have been helping to train the next generation of clinical and biomedical scientists. One of my favourite aspects of this job is training, and there are few things more satisfying than seeing trainees successfully obtain positions and watching them become successful scientists. I have also started lecturing biomedical science students on the very same course that I was doing at the same university 10 years ago! It was a very proud (but terrifying) moment walking into the same lecture theatre as a lecturer rather than a student.

What challenges have you faced in your career progression and how did you overcome them?

By far the biggest challenges that I have faced were passing the STP and FRCPath examinations. Some people assume that I do not struggle with examinations, but I honestly really struggle to retain new information and also get extreme anxiety when the time comes to sit them. I remember almost passing out with nausea right before the FRCPath part II viva! I overcame these struggles by working very hard and also talking to many people who had gone through the same thing. These wonderful people gave both practical and psychological examination advice. Without their invaluable help, I would have found these experiences even more daunting and nauseating.

What skill do you think everyone should develop?

Although knowledge is very important for this job, the more experience I get, the more I realise how important excellent people skills are. The ability to communicate effectively and influence people to see things from your perspective really is one of the most effective ways to make progress in almost any situation, including dealing with conflict or trying to persuade somebody to help you achieve something. The more I develop this skill, the more I really love to work with people to get things done, which is more effective than trying to do things on your own.

What motivates you every day?

Having continuous improvement projects in the pipeline is a very strong motivator for me. They do not have to be groundbreaking, but anything that will benefit patients and clinicians gets me out of bed in the morning. For example, we are currently working on significantly modernising our paraprotein screening and monitoring service, including a full assessment into our serum free light chain reference intervals, which I know will have a positive effect on patient management and result in fewer patients becoming anxious due to their result.

If you could give your younger self one piece of advice, what would it be?

Slow down. Biochemistry is such a huge and fantastic subject that we can all think of a million things we could do to improve our

service. I have been stung multiple times by taking on too many projects at once with good intentions but not being able to complete them properly (or at all!). Young eager Kade would benefit from being told to calm down a bit and spend some time really prioritising what is required in order to have the biggest improvements for the limited time available. Also, go to more conferences like LabMedUK because they are extremely fun and meeting people in the small world of biochemistry is both a pleasure and professionally helpful.

What's your favourite way to unwind after work?

I spend way too much time reading science fiction novels from authors including Isaac Asimov, Adrian Tchaicovski, Peter F. Hamilton and Arthur C. Clarke. I also love to play Xbox with my partner and friends, and I play the piano casually too. I have just started going to the gym too to help unwind, but I think we all know that will (probably) not stick. Anybody who knows me also knows how much I love to go to the pub to unwind. I have a New Year's resolution to do this less frequently. Success has been up for interpretation.

Do you miss anything about being a biomedical scientist?

Yes! I *really* miss being in the lab most of the day as a biomedical scientist. As a clinical scientist, I sometimes have series of days (sometimes weeks) of being stuck at a desk where I slowly forget how to use a pipette! Being in the laboratory was literally why I wanted to become a scientist, so I regularly crave this aspect of the career that biomedical scientists get much more exposure to.

However, generally, my choice to become a clinical scientist was a fantastic one and I have absolutely no regrets overall, but being a biomedical scientist definitely has its perks too.

What is your professional vision?

Now that the FRCPath examinations are complete, my ultimate goal is to get a position as a consultant clinical scientist in the future, but I really am in no rush to do this. For the next few years, I would like to gain more experience in training new staff and watching them become fantastic scientists, contributing to more publications, continuing to make general laboratory improvements and picking up more lectures for university students.

TAKING THE SCENIC ROUTE IN SCIENCE

Sofia Koussis is a year 2 STP trainee having come into the profession via a torturous route that included an Open University undergraduate degree. She is the regional EDI rep for the NW region.

What (or who) inspired you to choose this career path?

I have always had a love of science, and in particular human biology, but I never had the confidence in my abilities to pursue it as a career. I've worked many different roles in my life including a beauty therapist, a bartender and a barista until the age of 26 when I decided to bite the bullet and go to university to study health sciences. This is where I excelled most in my life so far and I finally found what I was supposed to do. There were many people in my life that inspired me to choose this career path, such as my neuroscientist brother, but I think finally having belief in myself and wanting to help people ultimately brought me here. My world only opened wider when I became a trainee clinical scientist in biochemistry and I realised I could get paid to do something I love.

What does your role involve on a day-to-day basis?

As I am still training at the moment, it involves various things including projects, audits, lab work, completing competencies and validating results (under supervision).

What is the most rewarding part of your job?

I am inspired and motivated by helping people. I like that even though biochemists are behind the scenes, we play such an important role in the patient care pathway. Also, since stepping into the EDI Liaison role, it's rewarding to know that I can help colleagues as well as patients, because everyone deserves to feel included regardless of who they are and where they come from.

What is one project or achievement of which you are most proud?

I think it would be easy to say something like my dissertation, or an audit I was involved in. But for me, I think all the things I have had to overcome in my life such as grief, mental health issues and self-doubt, I am proud that I am still here and pushing to be the best I can be. Even on the darker days, I am proud of myself that I am resilient.

What challenges have you faced in your career progression and how did you overcome them?

I left high school at the age of 16 because I struggled and thought it just wasn't for me

(I was actually just undiagnosed autistic). So, when I moved to the UK, I had to start from the beginning doing my GCSEs as an adult. It's been a long slog of studying and doing various jobs to lead me to where I am now, but I only overcame the challenges because I didn't give up.

What skill do you think everyone should develop?

I believe everyone should develop strong interpersonal skills, especially empathy. In science, where we're often focused on data, processes and outcomes, it's easy to forget that there is a real person behind every sample or result. Empathy helps us stay grounded in the human side of our work, reminding us that what we do ultimately impacts someone's life.

What motivates you every day?

It would be a lie to say I'm motivated every day of my life, and I don't think that should be something we should necessarily strive for. However, what motivates me is that innately I want to help people and I can do that in this role. I am also curious and love learning, so even on the days where motivation is low, there is always something that will spark my interest.

If you could give your younger self one piece of advice, what would it be?

Life is not going to be easy and you won't get to where you are now without putting work in. But believe me, you will get there. Don't listen to that little voice telling you that you aren't enough. Also, please stop tweezing your eyebrows.

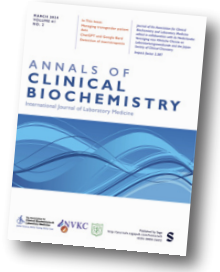
What's your favourite way to unwind after work?

Spending time with my partner and being outdoors is what helps me feel grounded, so activities like hiking, running, paddle-boarding and rowing is where I thrive.
I also have about 40 houseplants that are more needy than a pet.

What is your professional vision?

I would love to continue the path I'm on now, whether that be completing my FRCPath exams, or eventually working towards being a principal/consultant clinical scientist.
I would also love to do more work within the EDI role, developing LabMed and beyond to ensure a more equitable future for patients and colleagues alike.

ANNALS OF CLINICAL BIOCHEMISTRY LATEST RESEARCH ARTICLES

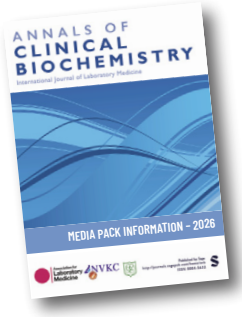


Check out these interesting new articles recommended for reading by the editors-in-chief of the *Annals of Clinical Biochemistry*:

Application of the six sigma model to evaluate the analytical performance of serum lipid analytes and design quality control strategies: A multi-centre study 3
Qian Liu, Yu Lin, Fang Yang, Yaping Dai, Huan Hang, Menglin Wang, Ming Hu and Fumeng Yang

Is there utility in testing IgA-endomysial antibodies in patients with weak-positive or equivocal IgA-tissue transglutaminase antibodies in the diagnosis of coeliac disease? A critique of current NICE guidance (NG20) 32
Samuel D Brown, Jacqueline Hitchins, Newton ACS Wong, Amy Hayes, Alice Ogden, Adrian Heaps and Philip Bright

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



ADVERTISING IN ANNALS OF CLINICAL BIOCHEMISTRY

Promote your brand to a highly engaged audience of laboratory medicine professionals – advertising is now available in both the *Annals of Clinical Biochemistry* online journal and our member-wide emails. To find out more, contact Jason Brown, Advertising Manager, at jason@labmed.org.uk

PUBLICATION DATES

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 March for the April 2026 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.

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A WARM INVITATION TO MEET AT LABMEDUK26

SARAH ROBINSON
LabMed Director of Events

I am really looking forward to seeing you all at LabMedUK26, taking place at The Eastside Rooms in Birmingham from 8-10 June 2026. This vibrant, centrally located venue has been purpose built to support large conferences and offers excellent accessibility and sustainability credentials – a fantastic setting for our annual gathering.

Every year that we organise this conference we adapt and evolve in order to meet the needs of our members. This year, as in previous years, we asked all members of the association to put forward ideas for sessions and speakers for our future programme, alongside the feedback that we received from last year's delegates. The response was exceptional – and while we couldn't include every suggestion, many ideas have shaped this year's programme. The scientific programme this year reflects those contributions, so thank you to everyone who contributed and I would encourage you all to continue sharing your ideas as we plan for the future.

We are also excited to introduce changes and enhancements to our session formats at LabMedUK26 that will help to highlight the variety of excellent work occurring throughout our departments. The full programme brings together leading experts, award lectures, clinical case sessions, workshops and training days – covering the science, systems and people shaping modern diagnostics.

Ticket information

Tickets for LabMedUK26 are now available across a range of options, including training-day, satellite workshop, one-day and two-day conference packages, with early-bird pricing available until 20 April 2026. Members receive discount rates, and priority for some sessions (such as the training day) is given to LabMed members.

Training day (Monday 8 June):

Members £135 early-bird / £160 full

Non-members £175 / £205

Satellite workshop – Putting the patient at the heart of diagnostics:

Members £245 | non-members £295

LabMedUK26 conference one-day tickets:

Members £250 early-bird / £295 full

Non-members £445 / £525

LabMedUK26 two-day tickets:

Members £405 early-bird / £475 full
Non-members £535 / £630

Book here

Bursaries and funding support

A number of bursaries are available to members to help with attendance costs, including the Freddie Flynn bursary (apply 23 January – 6 March) and regional and national education bursaries (apply 19 March – 30 April). There is also the Moira Kaye education grant for those attending the microbiology training day.

For general enquiries about LabMedUK26, please contact enquiries@labmed.org.uk

The venue

All LabMedUK26 conference and training day sessions will be held at The Eastside Rooms, Birmingham – a modern conference centre with full accessibility features and a commitment to sustainability. Delegates are encouraged to consider public transport and low-carbon travel options where possible.

Accommodation is available through the event's official booking partner (West Midlands Growth Company) with negotiated rates at hotels within easy walking distance of the venue. Rooms can be booked online, and special rates are guaranteed until **10 May 2026**.

Social events

Welcome evening

Monday 8 June, 5.30pm

LabMedUK26 delegates and training day attendees are warmly invited to an optional welcome evening at The Botanist, Gas Street Basin for drinks and networking from 5.30-7.30pm – a relaxed way to catch up before the conference begins.

The Botanist, 12 Bridge Street, Birmingham, B12 JRP

Conference reception and dinner

Tuesday 9 June, 7.30pm

The official conference reception and dinner will be held at Birmingham Council House, Victoria Square, Birmingham, B1 1BB. Starting with a welcome speech and drinks from 7.30pm, this event features a hot buffet supper and further opportunities to celebrate with colleagues and speakers. Attendance must be booked alongside your LabMedUK26 ticket.

SPOTLIGHT ON LABMEDUK26 SPEAKERS

The LabMedUK26 programme features an outstanding line-up of national and international experts across multiple disciplines of laboratory medicine. From patient-centred care and clinical diagnostics to metabolomics, neurology and sustainability, the speaker list includes established leaders and rising voices shaping our profession.

TUESDAY 9 JUNE 9.15AM
INTERNATIONAL AWARD LECTURE

Tahir Pillay

From bench to pocket: nanobodies in point-of-care biosensor design

Tahir holds several appointments including the chief specialist, professor and head of the Department of Chemical Pathology, at the University of Pretoria and National Health Laboratory service. They are an honorary professor of chemical pathology at the University of Cape Town; clinical director of International Activities at the Royal College of Pathologists, London and a deputy editor of the *Annals of Clinical Biochemistry.*

Tahir's research spans molecular cell biology of insulin signalling, the cell biology of insulin resistance, molecular modelling of ligand-receptor complexes and development of new diagnostic probes for point-of-care testing using recombinant DNA technology.

TUESDAY 9 JUNE
PARALLEL SESSIONS 10.15AM

Victoria Heath

Delivering scientific strategy across the nations

Victoria Heath was appointed as Wales' first chief healthcare science officer in March 2025.

With over 20 years experience in health and social care, Victoria advises the Welsh Government on the most effective ways to use healthcare science to deliver improved healthcare. As the professional lead for healthcare science in Wales, she represents more than 50 healthcare science professions in Welsh Government.

Victoria is dual registered with the HCPC as a biomedical scientist and clinical scientist with a background in microbiology and immunology.

She is passionate about apprenticeships and is a lead assessor for the National School of Healthcare Science. Outside of her role in Government, Victoria is an award winning science communicator with a particular interest in raising the profile of healthcare science careers.

TUESDAY 9 JUNE
PARALLEL SESSIONS 10.15AM

Sue Hill

Delivering scientific strategy across the nations

Professor Dame Sue Hill DBE is the chief scientific officer for NHS England and the head of profession for the scientific workforce where she provides scientific leadership and advice for the wider health and care system. A respiratory scientist by background, she has an international academic and clinical research reputation.

Dame Sue leads and directs genomics in the NHS, driving the world-leading programme to introduce a nationwide Genomic Medicine Service working in partnership between the NHS and academia, industry, UK and international governments/initiatives, building on her work in heading up the NHS contribution to the world-leading 100,000 Genomes Project.

TUESDAY 9 JUNE
PARALLEL SESSIONS 10.15AM

Catherine Ross

Delivering scientific strategy across the nations

Catherine Ross is the chief scientific officer for Scotland, Scottish Government's most senior clinical adviser for health science professional issues, and head of profession for the scientific workforce in the NHS in Scotland.

Catherine is a clinical scientist, chartered scientist and chartered biologist and is a fellow of the Royal Society of Biology, the National Institute of Prevention and Cardiovascular Health in Ireland and the European Society of Cardiology.

She holds a number of senior leadership positions nationally and internationally and is the current president of the Science Council, the awarding body of Chartership in Science, and is a board member of the Association of Cardiovascular Nursing and Allied Professions within the European Society of Cardiology (ESC).

LABMEDUK26 PROGRAMME: MONDAY 8 JUNE

Training and satellite workshop

Putting the patient at the heart of diagnostics

This new satellite workshop, led by Katy Heaney and Rav Sodi, focuses on integrating patient-centric principles into diagnostic testing – emphasising practical strategies and interactive learning on seeing patients as individuals throughout the diagnostic journey.

See Rav Sodi's article about this workshop on pages 36-37 of this issue of *LabMed News*.

Biochemistry Training Day

A full day dedicated to biochemistry practice, including joint sessions with immunology and a focused FRCPath workshop on Part 2 OSPE and oral preparation.

9.00am	**Registration**
9.30am	**Collaboration with other departments workshop**
11.00am	**Coffee break**
11.15am	**Joint immunology and biochemistry 'not in the textbooks' session**
12.30pm	**Lunch break**
1.30pm	**FRCPath workshop – The FRCPath Part 2 Module 1 objective structured practical examination (OSPE) and Part 2 oral examination**
3.00pm	**Coffee break**
3.15pm	**The value of UK NEQAS interpretative comments for you, the participant**
4.30pm	Closing remarks

Immunology Training Day

Run in parallel to the biochemistry training day, with joint sessions and specialist activities including mentoring and focused laboratory topics.

9.00am	**Registration**
9.30am	**Collaboration with other departments workshop**
11.00am	**Coffee break**
11.15am	**Joint immunology and biochemistry 'not in the textbooks' session**
12.30pm	**Lunch break**
1.30pm	**Mentoring session**
3.00pm	**Coffee break**
3.15pm	**Session 4 tbc**
4.30pm	Closing remarks

LABMEDUK26 PROGRAMME: TUESDAY 9 JUNE

8.00am **Arrival and registration**

9.00am **Welcome from the President**
Speaker: Ian Godber

9.15am **International Award Lecture**
From bench to pocket: nanobodies in point-of-care biosensor design
Speaker: Tahir Pillay

9.45am **Coffee break and exhibition**

10.15am **PARALLEL SESSIONS**
Delivering scientific strategy across the nations
This session will be formed by a panel of the chief scientific officers, chief scientific advisor and chief healthcare science officers from the four nations of the UK.
Panellists: Vicki Heath, Professor Dame Sue Hill, Catherine Ross, Ian Young

10.15am **The hunt for hidden paraproteins: unravelling their interference in biochemical diagnostics**
Chair: Alison Whitelegg

Can routine blood tests be used to develop a clinical risk prediction model to detect cases of multiple myeloma sooner
Speaker: Miguel Morales

Effect of paraproteins on bone metabolism investigations
Speaker: Nathan Lorde

IgM paraproteins: a "rare" interference in biochemical assays
Speaker: Nicola Pullan

11.45am **Lunch, exhibition and poster spotlight sessions**

12.45pm **Industry sponsored workshops**

1.45pm **Plenary session**
Getting it right for the patient: patient-focussed laboratory medicine
Speakers: Freddie Flynn, Martin Myers

2.15pm **PARALLEL SESSIONS**
How good should we be? Setting analytical specification goals
Chair: Rav Sodi

Practical uses for analytical performance specifications: an example involving HbA1c
Speaker: Eric Kilpatrick

Improving the approach to cardiovascular risk assessment: performance of modern equations for LDL-cholesterol vs direct LDL-C assays
Speaker: Tahir Pillay

Poor serum B12 (total B12) method harmonisation and unwarranted variation in diagnostic cut-offs for the diagnosis of vitamin B12 deficiency
Speaker: Dominic Harrington

2.15pm **Advances in diagnostic neurology**
Chair: Melanie Hart

Clinical and laboratory diagnosis of Prion disease
Speaker: Tze How Mok

Translating Alzheimer's disease blood biomarkers into clinical practice
Speaker: Ashvini Keshavan

Using seed amplification assays to enhance diagnosis, prognosis and clinical trial design across the parkinsonian disorders
Speaker: Edwin Jabbari

3.45pm **Coffee break and exhibition**

4.05pm **PARALLEL SESSIONS**
Medal Award presentations
Chair: to be confirmed

4.05pm **Improving primary aldosteronism detection and classification in the UK**
Chair: Tejas Kalaria

Primary aldosteronism – 2026 update
Speaker: Mark Gurnell

Developing UK guidelines for biochemical investigation of primary aldosteronism
Speaker: Sophie Barnes

RASH-UK Workstream 1: Conn laboratories reduce variability in primary aldosteronism?
Speaker: Sarah Davies

LABMEDUK26 PROGRAMME: WEDNESDAY 10 JUNE

8.00am **Arrival and registration**

9.00am **Foundation Award Lecture**
title to be confirmed
Speaker: to be confirmed

9.30am **PARALLEL SESSIONS**
Patient-centric diabetes care
Chair: Funmi Akinlade

POCT and HbA1c
Speaker: Emma English

Beyond HbA1c: Uuse of continuous glucose monitoring in diabetes care
Speaker: Parizad Avari

Continuous ketone monitoring in the management of diabetes
Speaker: Ketan Dhatariya

9.30am **Engineering the future of metabolic medicine**
Chair: Alana Burns

One kit, thirteen labs, twenty-six instruments: lessons in harmonisation from expanded newborn screening
Speaker: Rachel Carling

From drops to diagnosis: using dried blood spots for lysosomal enzyme activity
Speaker: Marianne Barr

The potential of metabolomic methods in inborn error of metabolism diagnosis: targeted, untargeted and functional
Speaker: Claire Hart

11am **Coffee break and exhibition**

11.30am **PARALLEL SESSIONS**
Interventions for obesity and the impact on laboratory medicine
Chair: Helen Ashby

Gut hormones from appetite regulation to obesity treatment
Speaker: John Wilding

Nutritional implication of metabolic bariatric surgery and glucagon-like peptide-1 (GLP-1) receptor agonist therapy
Speaker: Royce Vincent

Post-bariatric surgery hypoglycaemia and the lab investigations involved in diagnosis and treatment
Speaker: John Hazlehurst

11.30am	**Plastics, plastics everywhere: making a case for lab sustainability** Chair: Cerys March **Plastic fantastic . . . right?** Speaker: Lorna Jones **Sustainable pathology, diagnostics and clinical labs** Speaker: Martin Farley **Building sustainability into the everyday for healthcare professionals** Speaker: Lisa O'Fee
1pm	**Lunch, exhibition and poster spotlight sessions**
1.30pm	**Industry sponsored workshops**
2.00pm	**LabMed Annual General Meeting**
3.00pm	**Impact Award Lecture** **title to be confirmed** Speaker: to be confirmed
3.30pm	**Clinical Cases** Chair: Danielle Freedman
5.00pm	**Closing Ceremony and Awards**

PATIENT-CENTRED DIAGNOSTICS: PUTTING THE PATIENT AT THE HEART OF DIAGNOSTICS

RAV SODI

Consultant clinical biochemist, Broomfield Hospital, Mid & South Essex NHS Foundation Trust, Chelmsford; Senior visiting fellow, Faculty of Science and Engineering, Anglia Ruskin University, Cambridge

The emergence of patient-centred diagnostics

Patient-centred care has been around from time immemorial. Ancient or traditional medicine was inherently person-centred, showing great filial piety and was largely community-based care. The ancient Greek-derived Hippocratic Oath emphasised the physician's duty to the patient with the well-known adage: '*primum non nocere*' which is translated as, 'first, do no harm.'

For much of the nineteenth and twentieth centuries when great strides in science and medicine were made, the biomedical model dominated, which was disease-focused, technology-driven and the patient perspective was often sidelined if not completely ignored. However, in the 1970s the tide was turning as the 'movement of patient care' gained momentum with the founding of the Planetree Alliance by a patient in 1978[1], which focused on humanising healthcare. This is now an international movement whose mission is to 'partner with healthcare organisations around the world and across the continuum of care on a global mission to humanise the healthcare experience for everyone, everywhere, every time'.[1]

In 2001 the Institute of Medicine published a white paper entitled 'Crossing the Quality Chasm', which defined the concept of patient-centred care as a key aim in medical practice. Today, we may take this notion for granted but patient care was not always a mutual engagement with the 'doctor knows best' attitude largely permeating throughout healthcare systems. In the modern era, most of us will be familiar with patient/family engagement initiatives such as 'co-design', 'patient experience', 'the patient journey' and many more where the patient or client is invited to be central to all key decisions and designs.

The now well banded idea that 70% or more of all treatment decisions are predicated on laboratory diagnostics has brought sharp focus on the role of the clinical laboratory on the patient journey. The global adoption of patient-centred models worldwide has seen the emergence of new models of delivering diagnostics including direct-to-patient or consumer testing (D2C), point-of-care testing (POCT), 'personalised care' where treatments and even diagnostics are tailored to suit individual needs and the continued rise of genomics in medical practice in all its forms.[2]

What is patient-centred care?

Now that the model of patient-centred care is deeply entrenched in all of modern medical practice, the National Health Service (NHS) has embraced its core tenets. Person-centred care is about focusing care on the needs of the individual, ensuring that people's preferences, needs and values guide clinical decisions and providing care that is respectful of and responsive to them.[3] It is recognised that this would entail developing a workforce and community with behaviours, skills and competencies that support and drive person-centred approaches to wellbeing, prevention, care and support. However, it is important to appreciate that any health and wellbeing outcomes need to be developed in partnership between patient and caregiver.[3] The key tenets of patient-centred care are shown in figure 1 below.

There is emerging evidence showing that patient-centred initiatives clearly result in better patient outcomes and ironically, despite what is perceived, these approaches have shown to be cost effective and more economical.[4]

The role of the clinical laboratory in patient-centred care

The pioneer in quality management, Dr W. Edwards Deming, famously demonstrated that 85% of errors or problems in a system are due to the system or process itself, while only 15% are due to individual worker mistakes.[5] This 85:15 rule in the context of laboratory diagnostics means that most errors or inefficiencies are caused by flaws in the overall system (such as procedures, equipment or communication), not by the people working within it. This implies that to improve quality and reduce errors not only in the clinical laboratory but in the overall patient healthcare journey, the focus should be placed on improving processes and systems rather than blaming individuals.

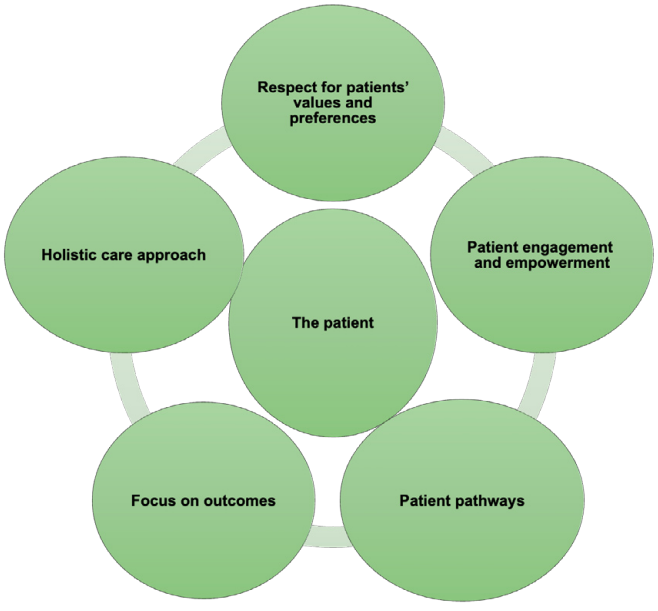


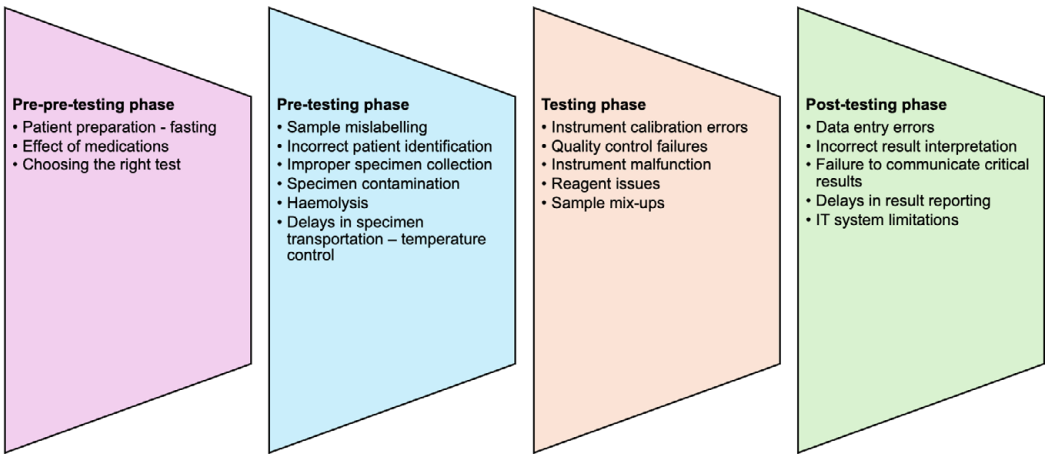
Figure 1. The core tenets of patient-centred care

It has been well established that the majority (45-70%) of all laboratory errors occur in the pre-analytical phase[6] with the majority likely occurring before the blood is even collected from an individual – the so-called pre-pre-testing phase. As a profession, we grapple with these issues on a daily basis. We have designed quality systems to detect and mitigate some of the common errors. We are of the opinion that many of the measures that have been designed to address these errors (shown in figure 2) rarely take into consideration the patient. It is time for laboratory systems to consider the patient journey when designing laboratory processes. For example, when we ask patients to collect urine, have we considered how the collection bottle will be sent to them, whether the instructions are clear and understandable and have we considered the easiest way for the patient to return the bottles to the laboratory? There is plenty of evidence that urine collections are rarely complete or ever returned.[7] For a procedure that is completely non-invasive, freely available (flowing!) and relatively cheap, this is a failing on our part for not designing lean and seamless systems that make it easier for our patients. This blinkered view can be remedied by adopting the patient-centred care model that provides a framework on which we laboratorians can work with our managers and leaders at all levels to improves processes, procedures and systems.

Representing the Association for Laboratory Medicine in the Far East

On 30 October 2025, by invitation, Katy Heaney and I represented the Association for Laboratory Medicine at the first Qatar Conference on Laboratory Medicine and Pathology hosted by the world-renowned Hamad Medical Corporation, whose healthcare systems are recognised for excellent patient care and who are continually improving their systems. The conference was an excellent opportunity to meet fellow laboratorians and pathologists. The common theme that emerged was that despite the vast differences in the climate (32°C arrival, Doha; 10°C departure, London) and other geopolitical matters we had similar laboratory and healthcare system issues. The workshop revealed that the common errors in laboratory practice (figure 2) appear to be universal. We all agreed that

Figure 2. Errors or 'pain points' in the diagnostic testing process



Katy Heaney and Rav Sodi

putting the patient at the heart of diagnostics can only result in improvements in the patient journey. We thoroughly enjoyed the shared experience and the conference as a whole and are grateful for the opportunity.

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An invitation to the LabMedUK26 workshop

On 8 June 2026 we will be holding a workshop at the LabMedUK26 conference, which will be held at the Eastside rooms in Birmingham. Everyone is invited. If you can bring your managers and other key personnel involved in pathway design, that would be invaluable for your organisation.

You can view the programme overleaf on pages 36-37. Spaces are limited so book your place now.

This will be an opportunity to repeat the experience we had in Doha, Qatar and share our experiences.

Importantly, it will be an opportunity for you to share your invaluable experience and design an NHS system that works for all. Small changes collectively make a big difference. Patient-centred care is a journey of learning, engaging and adapting but it starts with you.

PATIENT-CENTRED DIAGNOSTICS WORKSHOP: TUESDAY 9 JUNE

9.30am **Introduction and the patient story**

What does "patient-centered diagnostics" mean to you?

The importance of a patient-first approach in the journey and experience of the patient.

A clinical case-based activity where participants are invited to consider the specific aspects affecting a particular case scenario. The anxieties, concerns, practicalities, contact points and barriers are dissected to arrive at the main challenges affecting a patient's healthcare journey.

11.00am **Break**

11.15am **Core principles of a patient-first approach**

In this presentation, the conceptual framework and principles of patient-centric diagnostics are outlined. The philosophical and psychological underpinnings are briefly discussed.

12.15pm **Lunch**

1.15pm **Mapping the patient testing journey**

In this group exercise, the patient testing journey is mapped to identify the key touchpoints in the pre-test, during test and post-test phases. Participants will learn to identify "pain points" and "moments of truth" at each stage. By sharing group maps and arriving at common themes, the areas where patient needs are often missed will be highlighted.

The role of different stakeholders: Laboratory personnel, clinicians, front desk, IT and administrative, senior leadership at local and national level will be delineated to show how all contribute to the patient-centered journey.

2.15pm **Practical strategies and tools**

Models for health-care improvement will be presented. At the core of this workshop is providing patients and clinicians alike with a clear road map to navigate the complexities of the healthcare system. Central to this is the appreciation of the importance of current and emerging technologies including artificial intelligence and machine learning.

3.00pm **Break**

3.15pm **Action planning – "your personal mission"**

Drawing upon the principles discussed throughout the workshop, individuals are given the opportunity to reflect on their personal mission and develop a personal action plan. Participants will be encouraged to note their commitment, visualise potential obstacles and the support needed to overcome these.

In this activity-based session, groups will be invited to brainstorm common barriers to patient-centricity in their settings. The aim for each group will be to develop one or two practical solutions or “small wins” for each identified barrier. They will then be encouraged to share these ideas with the wider group enabling the cross-pollination of ideas. The importance of change management principles will be highlighted: Gaining buy-in (from leadership and staff), piloting initiatives, measuring impact and celebrating successes.

4.15pm **Commitment, wrap-up, evaluation and closing**

We close the session by summarising the key takeaways.

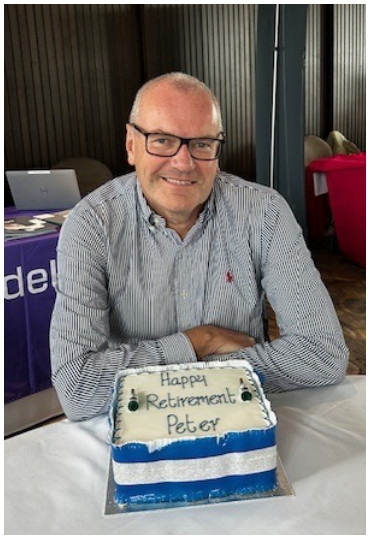
Both individually and as a group, we will help you in your commitment to implement patient-first approach to service in your work and daily practice. Hopefully participants will appreciate that small changes collectively make a big difference.

RETIREMENT OF PETER SHARPE

At the recent LabMed(NI) Autumn Scientific Meeting, we paid tribute to our colleague, Peter Sharpe, who is retiring from his role as chemical pathologist in the Southern Health and Social Care Trust (SHSCT).

by
JENNY HAMILTON
Consultant clinical scientist,
Department of Clinical Biochemistry,
Craigavon Area Hospital

After a largely misspent youth (I kid you not), Peter embarked upon his medical training, graduating from the Queen's University of Belfast (QUB) in 1988. He sampled a few different disciplines before deciding that chemical pathology was the one for him. After completing his MD in 1997 under the watchful guidance of Liz Trimble, Peter had a brief interlude as a consultant at the Royal Liverpool Hospital before commencing his consultant post in Craigavon Area Hospital in the SHSCT in 1999. This was a new chemical pathologist post where he had the task of setting up a brand-new Lipid service and multi-disciplinary Nutrition Support Team and ward round from scratch. Peter has been very successful in creating these services, along with participating extensively in the delivery of diabetes services across the SHSCT area. He has also served his time as regional tutor, even managing to drag me kicking and screaming through my exams, and has been the associate medical director for research and development in the SHSCT since 2008, a role he has greatly enjoyed. Peter has completed stints as the regional chair of the ACB (Northern Ireland) and also as chair of the Regional Council for RCPath (Northern Ireland).



Peter has published many papers over the course of his career, several of which seem to be linked to alcohol, namely red wine (of which he is quite the connoisseur) versus vodka and their effects on markers of coronary heart disease. I met Peter in QUB in 1996. My earliest memory of him is at Christmas carrying large boxes of research-funded red wine and vodka through the QUB Biochemistry Department like some oversized elf, sharing it all out to the eligible male students he had recruited to take part in his study over the Christmas holidays. As you can imagine, his popularity among said students knew no bounds.

Peter is one of the most well-travelled people I know. There's hardly a month goes by when he isn't either going on trips or planning them. We joke that he literally just

comes in to do a "wee bit of work" in between his holidays – a sign that he has got his work-life balance absolutely right. Peter is a highly effective and efficient member of the team in SHSCT and makes his role look effortless. I think the "powers-that-be" only realised the sheer magnitude of work he covered when he told them he was retiring and provided them with the full list of things he had actually been doing.

Outside of work, Peter has many interests, the main ones being his lovely wife Dorothy, and daughters Emily and Anna, who all do their very best to keep him on the straight and narrow. In recent years he has taken up running marathons and has been to various countries to compete. After a particularly difficult run a few years ago, he hobbled into my office and said "That's it– I'm hanging up my running shoes. If you hear me ever mention taking part in another marathon, I'll give you £10,000". He's since taken part in several more marathons . . . and I'm still waiting for this £10,000 to materialise.

Personally, Peter has been an absolute pleasure to work with. He is kind, considerate, easy to talk to, and always happy to help and support his colleagues in any way he can. He is great "craic" and very down-to-earth, and it's clear to anyone who spends time with him in his clinics that he is very much respected and appreciated by his patients. I count Peter not only as a colleague, but also as a very dear friend, and hope he will continue to come and visit us in the SHSCT so we can catch up and put the world to rights over lunch. So, Peter, enjoy your retirement – you will be greatly missed.

Kathryn Ryan, Chair LadMed (NI), Derek McKillop, Peter Sharpe and Jenny Hamilton

PAEDIATRIC LABORATORY NETWORK UPDATES – RANGES, SCREENING AND SAMPLE TYPES

FRANCESCA RYAN-BESWICK

Principal clinical scientist, North Midlands and Cheshire Pathology Service, Royal Stoke University Hospital, Stoke on Trent

Paediatric Laboratory Medicine Network – Winter meeting

The UK and Ireland Paediatric Laboratory Medicine Network (PaLMnet) reformed in summer 2025, appointing Anna Robson as chair and Rosie Forster as vice chair. The network plans to meet twice a year to share updates and address issues across paediatric laboratory medicine.

The Winter meeting, held virtually on Monday 8 December, brought colleagues together for a packed agenda. Key topics included urate reference ranges, outcomes from congenital hypothyroidism screening, serum vs plasma considerations and updates from the NEQAS Cystic Fibrosis audit. The session concluded with an open forum for laboratory and clinical queries.

Paediatric reference ranges for urate

presented by Dr Pathirana, Newcastle upon Tyne Hospitals NHS Foundation Trust

Paediatric urate interpretation remains challenging because existing pathology harmony ranges only apply to adults. Relying on adult cut-offs risks missing raised urate levels associated with inborn errors of metabolism, such as Lesch-Nyhan syndrome, as evidenced by a case in Newcastle. The team at Newcastle verified CALIPER reference intervals on the Roche platform in accordance with CLSI C28-A3 guidelines, demonstrating their suitability for clinical use. These ranges have been adopted across the region to improve detection of clinically significant abnormalities and support earlier investigation. PaLMnet recommends colleagues review their local urate reference intervals and consider implementation of paediatric specific ranges, where possible.

Serum vs plasma – which sample type serves paediatrics best?

presented by Anna Robson, Manchester Royal Infirmary

Anna presented a comparative study demonstrating that plasma samples provided slightly higher analyte yield and, notably, significantly lower haemolysis rates than serum in healthy volunteers.
This promoted discussion about the wide variation in paediatric sample types used across the UK, and the lack of national consistency in analyte validation for plasma. Attendees agreed that a national audit would help map current practice and guide future harmonisation. A taskforce has now been formed to take this forward, with the expectation that clearer guidance could reduce repeat sampling.

Congenital hypothyroidism: understanding long-term outcomes

presented by Leanne Wherett, Manchester Royal Infirmary

Leanne presented a multicentre review of congenital hypothyroidism (CHT) outcomes, addressing the long standing challenge of tracking children beyond initial diagnosis. The team achieved outcome follow up in over 95% of eligible cases. Of 152 children reviewed, 33% had transient CHT and a successful trial off thyroxine. Analysis of TSH and FT4 screening data showed that concentration at diagnosis did not predict permanence. The strongest indicator of successful trial off thyroxine was a low pre trial thyroxine dose, with 90% of those on a pre-trial thyroxine dose of <25 µg/day successfully withdrawing. The discussion highlighted the need for a national digital system, like that used for sickle cell outcomes, to support consistent long term data collection and prevent loss to follow up.

Clinical queries and best practice discussion

The meeting concluded with an open Q&A session, allowing delegates to share practical challenges and compare approaches across laboratories.
Topics ranged from the limited value of ELF testing in paediatrics to the role of mass spectrometry in oestradiol measurement, B vitamins assay availability, neonatal conjugated bilirubin requests, sweat testing in patients on modulator therapy, vetting of protein electrophoresis, and quality assurance for FFA analysis. Attendees valued the opportunity to benchmark practice and identify areas where national guidance or shared protocols could improve consistency.

Anna, Rosie and I would like to thank all delegates for their engagement and valuable contributions throughout the meeting. The next PaLMnet meeting will take place face-to-face in Birmingham on 11 June 2026. To join the distribution group or suggest future topics, please contact francesca.ryan-beswick@uhnm.nhs.uk

NATIONAL AUDIT DAY 2025

Contributors:

AILSA RALPH
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National Audit Day 2025, held on 28 November at the Royal College of Pathologists and online, brought together laboratory professionals from across the UK to explore how national audit findings can be used to reduce variation, improve consistency and strengthen patient-centred care. The meeting was opened by **Dr Wassif**, national audit lead, and focused on PSA, testosterone and tumour markers, combining national audit findings with expert clinical insight and patient experience to highlight both progress and ongoing challenges in laboratory medicine.

PSA testing: why context is critical

The national PSA audit was presented by **Andrew Seggie** and **Abel Tesfai** from Prostate Cancer UK, who explored how PSA is requested, analysed and reported across UK laboratories. While most laboratories now use NICE NG12 age-related thresholds, they highlighted that PSA requests frequently lack key clinical information such as prostate cancer history, treatment status or symptoms, limiting meaningful interpretation – particularly when PSA is used for monitoring rather than diagnosis.

This was followed by a clinical update from **Caroline Moore**, who discussed current prostate cancer screening and diagnostic pathways, including emerging evidence from the TRANSFORM study. Her presentation reinforced the importance of close collaboration between laboratories and clinicians to ensure PSA results are interpreted in the correct clinical context.

The patient perspective: impact beyond the numbers

A powerful patient perspective was shared by **Neil MacLachlan**, a retired consultant obstetrician and gynaecologist, who described his experience of prostate cancer diagnosis, treatment and subsequent biochemical recurrence. He explained how a rising PSA following prostatectomy was initially reported as "normal" due to the application of a generic reference range, delaying recognition of recurrence until he reviewed the numerical results himself.

His account resonated strongly with the audience and reinforced a key message from the audit: PSA testing for detection and PSA monitoring following treatment are fundamentally different clinical questions and require different interpretative approaches.

PSA analysis and reporting limits

Variation in PSA analysis was further explored through audit findings and discussion. Laboratories reported using a range of analytical platforms, most commonly Roche, followed by Abbott and Siemens, with differences in recommended lower reporting and analytical limits.

Related findings from the national tumour marker audit were presented by **Louise Ward** (Bedford Hospital NHS Trust) and **Peter West** (South Thames Audit Group). They highlighted wide variation in PSA reporting limits at low concentrations and limited confirmation that these limits remain valid following verification. Speakers emphasised the importance of appropriate internal quality control material at low PSA concentrations and discussed whether harmonised or method-specific thresholds may be required to support reliable detection of biochemical recurrence.

Testosterone testing: variation and pathways

The national testosterone audit was presented by **Nicola Barlow**, who outlined significant variation in laboratory practice and a widespread lack of clear clinical pathways, with around 70% of laboratories reporting none in place. Inconsistent approaches to borderline male testosterone results, continued reporting of free androgen index in some laboratories, and limited communication of pre-analytical requirements for female testosterone testing were highlighted as key areas for improvement.

A clinical perspective was provided by **Richard Quinton**, who discussed testosterone therapy in pathological versus functional male hypogonadism. His presentation emphasised the importance of interpreting testosterone results within a broader clinical and physiological context and highlighted that testosterone replacement is not universally beneficial, with lifestyle interventions often more appropriate for certain patient groups.

Richard Quinton

Tumour markers: appropriate use and future direction

The tumour markers audit, the first national review since 2012, was presented by **Peter West** and **Louise Ward**, followed by an overview of tumour marker services from **Cathie Sturgeon**. Findings highlighted ongoing challenges around appropriate requesting, particularly in acute care settings, limited vetting of requests and continued use of tumour markers in body fluids despite limited evidence and lack of external quality assurance.

There was strong support from both speakers and delegates for the development of a nationally agreed, LabMed-endorsed guidance document to bring together existing recommendations and support more consistent practice.

Looking ahead, **Kathryn Hawkesford**, consultant medical oncologist at Bart's Health NHS Trust, provided an overview of current and emerging cancer therapies, including CAR-T cell therapy and tumour-infiltrating lymphocytes. The scientific programme concluded with **Michael Duffy**, who introduced circulating tumour DNA (ctDNA) and its potential role in cancer surveillance, recurrence detection and prognostic assessment.

Kathryn Hawkesford

Audit Award

As always, there was a very strong collection of posters on display. This year's Audit Award was won by **Hannah Fearon** with 'Rethinking fixed cut-offs in prostate cancer screening'. The runner-up was **Megan Sounness** with 'Telephoning urgent cortisol results and the impact of an ONDST-cortisol test code'.

Conclusion

National Audit Day 2025 demonstrated the value of audit as a catalyst for reflection, discussion and change. Across all sessions, the message was clear: reducing unwarranted variation, embedding clinical context and improving communication are essential to ensuring laboratory results truly support patient care. Thank you to everyone who took part in the day.


Left to right: Wassif with Hannah Fearon and Finlay Mackenzie

OBITUARY

JAMES HOOPER

James Hooper, who was consultant chemical pathologist and head of department at the Royal Brompton Hospital until his retirement in 2018, died in November 2025, having been diagnosed with pulmonary fibrosis in 2022.

James was born and raised in South Wales. His childhood was not a happy time for him, but he excelled academically and, in his words, 'escaped to London to study medicine'. London was where he settled and he spent the rest of his life in and around the capital. He always remained proud of his Welsh heritage. He studied medicine at St Mary's Hospital Medical School and following his house jobs, completed his MD thesis on pineal indoles at St Bartholomew's Hospital Medical College, under the supervision of Robert Silman, then embarked on specialist training in chemical pathology at St Mary's Hospital. He was appointed to his consultant post at The Royal Brompton in 1989.

James had a real passion for teaching and with John O'Connor, was key to the development of the 'ACB Clinical Cases CD-ROM' programme, which was an international success. James travelled with John and the late Rick Jones nationally and internationally to promote the project and the concept.

He was passionate about the importance of incorporating the study and presentation of clinical cases into training and continuing education programmes in laboratory medicine, to emphasise the importance of a strong clinical interface between laboratory and clinical specialties. He co-edited the 2001 AACC (now ADLM) publication *Challenges at the Clinical Interface,* a collection of 48 case reports in which clinical laboratory investigations had been

key to diagnosis and treatment. The cases had been presented by UK based clinical biochemists and chemical pathologists at the annual continuing education meetings held in the Lake District in the 1990s. With his co-editors, Danielle Freedman, Chris Price, David Worthington and Philip Wood, James had initiated these meetings, which were generously sponsored by Instrumentation Laboratory UK Ltd and had played a key role, with Danielle Freedman and Philip Wood, in planning the clinical cases sessions.

James contributed greatly to the work of the ACB. Between 1992 and 2017, there was not a year when he was not a member of a committee or a working group. Most notably, he was chair of the Publications Committee (1992-1996) and a member of the Clinical Practice Section for nine consecutive years (2008-2017).

James was a special person. He was an excellent head of department, genuinely

interested in the happiness and career development of those working with him. He encouraged people to be the best that they could be. Highly intelligent, his interests were wide ranging, food and wine, astronomy, mathematics, physics, art, modern music, sport, nature and latterly, his garden. For many years he drew up a wide-ranging and topical Christmas quiz, which he circulated to friends and colleagues and provided detailed answers for participants at the end of January. His hero was Richard Feynman, the American theoretical physicist and Nobel Prize winner and following his retirement, James devoted much of his time to his real passion, physics and mathematics, and was in near daily contact with John O'Connor regarding complex theoretical concepts in astronomy and cosmology.

James was a loyal and caring friend to many. He was gregarious and his hospitality and ambience were second to none. He was always the life and soul of the party. Each Christmas he hosted memorable lunches for his colleagues at the Cork and Bottle Wine Bar in London's Leicester Square. He enjoyed life to the full and relished telling stories of his experiences, such as visiting CERNE and the Large Hadron Collider and having had the opportunity to discuss, with Heston Blumenthal, the science behind the latter's culinary creations. In early 2025, he met Roy Hodgson, the former England football manager, while visiting Majorca. It was the highlight of his trip!

There were some dark periods in his life. In 2012, the tragic loss of his son, Gareth, who was in his early twenties, following an accident in Brazil, was devastating for him. He welcomed the support of his many friends through that difficult time.

The lives of all those who knew James well have been enriched by knowing him and he will be much missed and not forgotten.

Janet Smith
John O'Connor
Danielle Freedman
Jo Sheldon

James Hooper, Rick Jones and John O'Connor, Hong Kong, 1993

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 51 from the December issue

During the winter holiday season, hospital labs notice a spike in respiratory infections among children following group gatherings (such as carol singing and holiday parties). Which of the following statements about the likely viral pathogens and their laboratory characteristics is most accurate?

A) Influenza A virus is well known for dramatic changes in its antigenic structure ('antigenic shift') leading to a potential significant increase in cases.
B) Respiratory syncytial virus (RSV) is best diagnosed using traditional bacterial culture methods.
C) Coxsackie B virus is a common cause of bronchiolitis in winter outbreaks.
D) Ethylene oxide is ineffective against enveloped viruses on laboratory surfaces.

Answer

Option A is the most accurate: Influenza A undergoes both antigenic drift (small changes) and antigenic shift (major changes), with shift responsible for new potential pandemic strains. This trait is important during holiday season crowd events, which can amplify spread.

Options B to D are incorrect: B) RSV is a virus and cannot be diagnosed with bacterial culture; rapid antigen tests, PCR or immunofluorescence are used instead. **C)** While Coxsackie viruses cause a variety of diseases including pleurodynia and viral meningitis, RSV (not Coxsackie) is the classic cause of bronchiolitis and increased winter respiratory illness in children. **D)** Ethylene oxide is a widely used sterilisation agent and is effective against viruses, including enveloped ones, if used within specific temperature and humidity ranges.

Question 52

In late summer 2025, a 72-year-old man from Rome (Lazio region), with a history of hypertension and type 2 diabetes, presents with three days of fever, malaise and myalgia, followed by acute confusion and right-sided weakness over 24 hours. He has not travelled outside Italy. On examination, his temperature is 38.9°C, GCS 12, with right upper limb weakness and neck stiffness. CT head is normal. CSF shows opening pressure 26 cmH_2O, WBC 180×10^6/L (90% lymphocytes), protein 1.1 g/L, glucose 3.0 mmol/L (serum 5.4 mmol/L). MRI shows T2 hyperintensities in the basal ganglia and thalami.

Which of the following is the most likely causative pathogen?

A) Listeria monocytogenes
B) Herpes simplex virus type 1
C) West Nile virus
D) Neisseria meningitidis serogroup B
E) Tick-borne encephalitis virus

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

DEACON'S CHALLENGE REVISITED

NO 41. ANSWER

A woman had a beta hCG concentration measured at 265 IU/L and 11 days later, following some abdominal pain, it was 820 IU/L.

Assuming hCG rises exponentially in early pregnancy, what has been the doubling time over this period? What is the significance of the result you obtain?

The integrated form of the rate equation describing exponential growth is:

$$\log_e C_t = \log_e C_0 + k.t$$

Where: C_t = concentration at time t

C_0 = initial concentration

t = time

k = rate constant

Note that this formula is identical to that used for exponential decay except the $-k.t$ has become $+k.t$.

Substitute: C_t = hCG concentration at 11 days = 820 IU/L

C_0 = initial hCG concentration = 265 IU/L

t = 11 days

Then solve for k:

$$\log_e 820 = \log_e 265 + 11k$$

$$6.709 = 5.580 + 11k$$

$$11k = 6.709 - 5.580 = 1.129$$

$$k = \frac{1.129}{11} = 0.103 \text{ days}^{-1}$$

We are asked to calculate the doubling time (t_2). When $t = t_2$ the initial concentration of hCG has doubled to $2C_0$. Therefore:

$$\log_e 2C_0 = \log_e C_0 + k.t_2$$

Rearrange to give an expression for t_2:

$$k.t_2 = \log_e 2C_0 - \log_e C_0 = \log_e \frac{(2C_0)}{C_0} = \log_e 2 = 0.693$$

$$\boxed{t_2 = \frac{0.693}{k}}$$

Substitute $k = 0.103$ to obtain the doubling time for hCG:

$$\text{Doubling time } (t_2) = \frac{0.693}{0.103} = \textbf{6.7 days} \text{ (2 sig figs)}$$

The normal doubling time for hCG during early pregnancy is approximately two days. Therefore this result is consistent with ectopic pregnancy.

Alternatively the value for k ($0.693/t_2$) can be substituted directly into the integrated rate equation and re-arranged to give an expression for t_2:

$$\log_e C_t = \log_e C_0 + \frac{0.693.t}{t_2}$$

$$t_2 = \frac{0.693.t}{(\log_e C_t - \log_e C_0)}$$

Question 42

The upper limit of the reference range for mercury excretion in urine in occupationally exposed workers is given as: 10 µg Hg/g creatinine.

Express this as nmol Hg/mmol creatinine (atomic weight mercury 200.6, molecular weight creatinine 113.1)

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

SUSSEX CHALLENGES

Points of interest in this set of data will be addressed in this and the next Sussex Challenge.

Challenge 4

A 36-year-old male arrives at the Emergency Department with severe colicky abdominal pain due to recurrent renal calculus.

Analyte	Admission	2h later	Unit	Ref interval
Serum sodium	138	134	mmol/L	136-145
Serum potassium	3.8	4.2	mmol/L	3.2-5.1
Serum urea	6.9	6.7	mmol/L	1.7-8.3
Serum creatinine	88	82	µmol/L	62-106
e-GFR (CKD-Epi)	>90	>90	mL/min/1.73 m^2	
Plasma glucose	5.8	6.2	mmol/L	
Serum total protein	77	75	g/L	66-87
Serum albumin	45	46	g/L	35-52
Serum globulin	32	29	g/L	18-36
Serum total bilirubin	10		umol/L	0-21
Serum alkaline phosphatase	95		U/L	40-129
Serum ALT	30		U/L	0-41
Serum calcium	2.32	2.35	mmol/L	2.15-2.50
Serum adjusted calcium	2.22	2.23	mmol/L	2.15-2.50
Serum phosphate	0.65	1.10	mmol/L	0.80-1.50
Arterial blood pH	7.55			7.35-7.42
Arterial blood H^+	26		nmol/L	35-45
Arterial blood $PaCO_2$	3.9		kPa	4.5-6.2
Arterial blood PaO_2	14.2		kPa	12.0-15.0
Arterial base excess	+6		mmol/L	±2

1. **What do you think are the key findings?**
2. **What causes of a low serum phosphate concentration do you recognise?**
3. **What do you think is the mechanism of the low serum phosphate concentration in this person?**
4. **What are the clinical ramifications and concerns due to the hypophosphataemia?**

Commentary

1. What do you think are the key findings?
Low serum phosphate concentration in the first sample but not the second. Elevated blood pH and low hydrogen ion concentration. Low blood $PaCO_2$ and elevated base excess

2. What causes of a low serum phosphate concentration do you recognise?
As with most ions that are mostly intracellular, redistribution is an important cause.

- Cellular redistribution:
  - IV glucose infusion
  - alkalaemia (metabolic or respiratory)
  - insulin especially IV – DKA Rx, re-feeding syndrome
  - Rx leukaemia/lymphoma
  - hungry bone syndrome
  - hepatic failure
  - surgery
- Intake/absorption failure:
  - poor intake including parenteral nutrition
  - complex formation in small bowel – phosphate binding agents
  - chronic diarrhoea
  - vitamin D deficiency
  - use of antacids, causing malabsorption
- Renal tubular loss:
  - hyperparathyroidism – PTH or PTHrp
  - fibroblast growth factor 23 dependent causes – tumour induced or inherited
  - paracetamol poisoning
  - drugs – alcohol abuse, aminoglycosides, steroids, cisplatin, tenofovir, IV iron replacement (especially ferric carboxymaltose)
  - metabolic or respiratory acidosis
  - Fanconi syndrome (caused by e.g. light chain excess myeloma, Wilson disease, tyrosinaemia, etc)
- Other:
  - chronic alcoholism
  - liver disease
  - septicaemia
  - renal replacement therapies

See: Flowers KC *et al*. Investigative algorithms for disorders causing hypophosphataemia and hyperphosphataemia: a narrative review. *J Lab Precis Med* 2024; 9:33.
https://jlpm.amegroups.org/article/view/9396

3. What do you think is the mechanism of the low serum phosphate concentration in this person?
Renal calculus causes severe pain resulting in hyperventilation, which in turn can cause a respiratory alkalosis.

The mechanism for the fall in serum phosphate concentration in response to alkalosis is due to changes in the activity of phosphofructokinase. This enzyme catalyses the conversion of fructose

6-phosphate and ATP to fructose 1,6-bisphosphate and ADP and is the key regulator of the glycolytic pathway. Activity of this enzyme is regulated by a number of mechanisms such as the ATP:AMP ratio – being less active in the presence of high ATP concentrations and more active at high AMP concentrations. The enzyme activity is also lower in the presence of a raised hydrogen ion concentration such as that generated by elevated lactate concentrations thus reducing the rate of glycolysis and further lactate generation. Conversely, when there is a fall in intracellular hydrogen ion concentration (elevated pH) phosphofructokinase is stimulated with a subsequent increase in demand for phosphate required to form glycolytic intermediate metabolites in the glycolytic pathway.

4. What do you think are the clinical ramifications and concerns due to the hypophosphataemia?
Whilst mild hypophosphataemia (<0.8 mmol/L) is common during hospital admissions, severe hypophosphataemia (<0.3 mmol/L) is less frequent but may cause severe adverse consequences.

These include haemolysis and rhabdomyolysis probably linked to ATP depletion. There is also a decrease in red cell 2,3-DPG generating a shift to the left in the oxygen dissociation curve, reducing oxygen delivery to tissues.

Datta B N, Stone M D. Hyperventilation and hypophosphataemia. *Annals of Clinical Biochemistry.* 2009; 46(2): 170-171.

Imel E A, Econs M J. Approach to the Hypophosphataemic Patient. *J Clin Endocrinol Metab.* 2012; 97: 696-706.

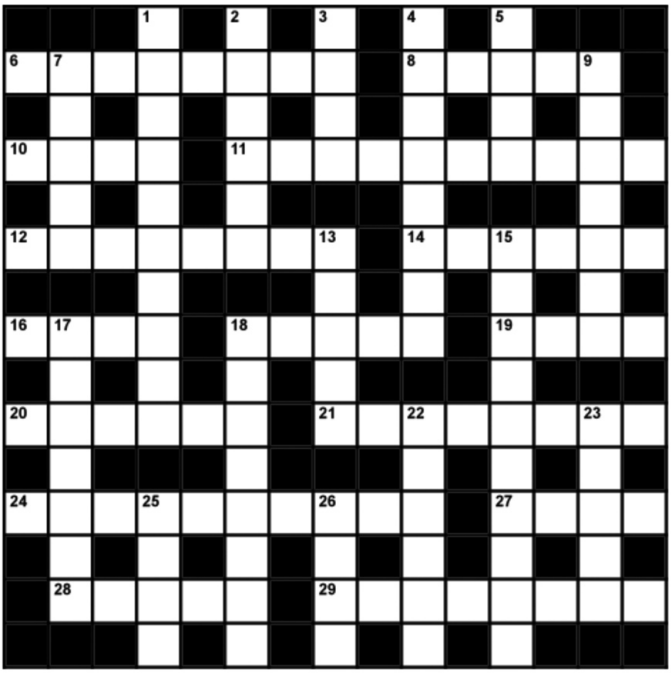
THE CROSSWORD BY RUGOSA

Across

6 Instruction to turn trial around (8)
8 Tests same ten elements (5)
10 Decline heading for takeaways? (4)
11 Secrecy black out current about energy generator (5,5)
12 Gets back rallies (8)
14 The Spanish follow, steal costly metal (6)
16 Dispatch office (4)
18 Learn about the kidney (5)
19 Taken in by enemy threat fiction (4)
20 All but two beginners surmised uncertainly the depth of the skin (6)
21 Clean break around iliac crest region left as one result of an RTA (8)
24 Crowd behaviour legal in chemistry and electronics (4,6)
27 Sex by 16 we hear (4)
28 Seek consultant help concerning iron – first repeat returned identical result (5)
29 Took as an insult, got red and tense (8)

Down

1 One carried out on one carried off (10)
2 Fed up, the French grass cutter (6)
3 Odd culture, this (4)
4 Critical Pearson lowered a number (8)
5 Simple, said to come and go (4)
7 Leave to reorganise routine waste material (5)
9 Being in the black novels about distribution (7)
13 Current news about collagen structure (5)
15 Add to complete manganese mixture (10)
17 Opera in new production outdoors (4-3)
18 Botched re-fractures sent far away for treatment (4-4)
22 Charge without that uneasy hesitation (6)
23 Money in reserve for skin treatment (5)
25 Vault out of the woods (4)
26 Initial test results allow endless dinners (4)



SOLUTION FOR DECEMBER'S CROSSWORD

SUDOKU ... THIS MONTH'S PUZZLE

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

SOLUTION FOR DECEMBER

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

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