LabMedNews

Association for Laboratory Medicine

FEBRUARY 2024

- A new name and new look for a New Year
- Investing Members' money for good with Tribe Impact Capital
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- National Audit, BSI-CIPN and Scotland Regional Meeting Reports
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Transform Your Laboratory Workflow with the CALEX Revolution!

New CALEX faecal calprotectin collection kits enable patients to efficiently prepare and send in their samples, ready for calprotectin testing, freeing up valuable resources in the laboratory.

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FEBRUARY 2024

Association for Laboratory Medicine

LabMed News ISSN 3033-3814

CEO AND PRESIDENT UPDATE

We're delighted to start 2024 with the new name and brand for the Association for Laboratory Medicine. It gives us a chance to realign our mission with our values of inclusivity, sustainability and innovation and continue to build an influential, diverse and inclusive community of scientists, clinicians, innovators, collaborators and researchers.

The new Association now reflects the breadth of our membership and supports our ambitions to grow our influence in the sector working with a wider range of stakeholders and partners including through our work with the Pathology Alliance and our corporate members.

Our influencing priorities for 2024 include developing our work on regulation for direct to consumer testing, supporting members to understand the landscape around AI and using our newly formed workforce taskforce to ensure we have the data we need to influence decisions.

Bookings have opened for LabMedUK24 in Brighton from 10-12 June. A huge thanks to Sally Benton, Scientific Programme Chair for pulling together an excellent programme that covers big picture thinking, new science and updates on key areas. The training day offers an important opportunity for trainees to get to know each other as well as learn.

Council have agreed a new regional events policy that encourages each region and nation to host one in-person and one on-line scientific meeting each year that will be free for members to attend and supported by the staff team. It's great to see so many of these dates in the diary already so we can promote them well in advance and help members plan their learning for the year.

As well as the hugely popular Audit Day in November, 2024 will see the return of the leadership and management course in August and new digital learning opportunities through the Learning Academy. This online platform is being piloted now and will be open for all members to sign up to from 1 March. It's aimed at Trainee Clinical Scientists and medics preparing for the FRCPath exams and anyone wanting to refresh their knowledge.

The Green Champions group will be building on the partnership with the NHSE, the IBMS and the RCPath following the joint How Green is Your Lab Symposium in December 2023 and our EDI network grows as more committees include reps and actions within their workplan.

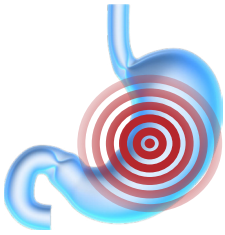
The Federation of Clinical Scientists is high on our priorities for 2024 with a renewed focus on training and recruitment to grow the number of reps and support we can give members. It's unique as a certificated Trade Union as it is run by Clinical Scientists for Clinical Scientists and getting involved is a hugely valuable development opportunity we want to share with more members.

Finally, we're pleased to have a full staff team in 2024 with more support for our editorial boards and events and education activities.

VICTORIA LOGAN Chief Executive
KATH HAYDEN President

GastroPanel®

Quick Test NT

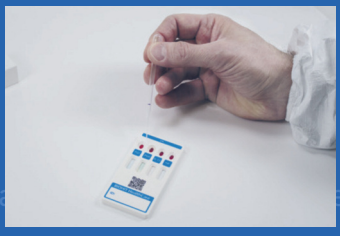


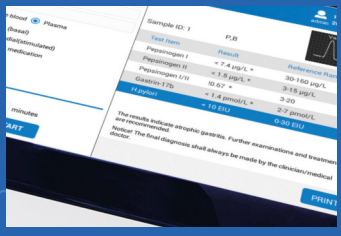
New rapid test to triage gastroscopy referrals

Atrophic gastritis is a chronic stomach condition that is a priority for gastroscopy referral and endoscopic surveillance based on an increased risk of gastric adenocarcinoma. It is also associated with iron deficiency anaemia (IDA), pernicious anaemia (PA), and nutrient deficiencies.

GastroPanel Quick Test NT identifies atrophic gastritis before endoscopy, enabling patients awaiting referral to be triaged based on risk. Testing dyspeptic patients using GastroPanel® can help to identify or rule-out atrophic gastritis to alleviate patient concerns and waiting list pressures associated with gastroscopy referrals, by aligning clinical resources with patients' needs.

- Select cases for gastroscopy according to risk
- Aid diagnosis of atrophic gastritis, *H. pylori*, and acid dysregulation
- Investigate the cause of IDA, PA, and nutrient deficiencies
- Ease the burden on overstretched gastroscopy services
- Finger-prick whole blood sample (POCT) or EDTA plasma (Lab)





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A NEW NAME AND NEW LOOK FOR A NEW YEAR

You will have already noticed that things look a little different in this issue – as well as the magazine having a new name – *LabMed News*.

The Association has changed its name to the Association for Laboratory Medicine and we have changed our branding.

This new name and brand better reflects our current membership and is open and inclusive to new members in other disciplines in Laboratory Medicine. As we evolve, we continue to build an influential, diverse and inclusive community of scientists, clinicians, innovators, collaborators and researchers.

As well as the name, we have changed our logo – we have incorporated the motif of a zero and one to represent how we use data, science and technology to support human health.

Association for Laboratory Medicine

We have also looked at how this is incorporated into our products and services with new logos for LabTestsOnline-UK, Learning Academy and our National Meeting, LabMedUK24.

LabTestsOnlineUK Produced by Association for Laboratory Medicine

LearningAcademy Association for Laboratory Medicine

LabMedUK24
Brighton 10–12 June

As a membership organisation we need to change and innovate in order to respond to our members' needs as well as the changing environment that impacts on Laboratory Medicine. We are confident the new brand will attract a new generation of members and sustain the excellent work of our members.

INTRODUCING ACUSERA SMART

STREAMLINE YOUR QC, THE SMART WAY

The Acusera Smart controls range is designed to fit directly onto a wide range of test systems without the need to aliquot material, streamlining the QC process by minimising human error and optimising workflow.

STREAMLINE WORKFLOW

With the ability to load the Acusera Smart QC and walk away, it optimises workflow by removing manual steps.

MINIMISING HUMAN ERROR

The Smart QC workflow minimises the potential for human error by reducing the operator handling time.

AUTOMATION

Automating the quality control process reduces turnaround time and increases efficiency.

REDUCED STORAGE

Can be conveniently stored onboard analysers with refrigerated compartments, for added convenience.

SIMPLIFIED PROCESS

Our SmartScan controls are linked to an XML file from Randox.com, where QC target values can be uploaded directly to the analyser, simplifying the onboarding process.

CONVENIENT DESIGN

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RANDOX
QUALITY CONTROL

INVESTING MEMBERS' MONEY FOR GOOD WITH TRIBE IMPACT CAPITAL

Tribe Impact Capital is proud to collaborate with the Association for Laboratory Medicine as your chosen investment manager, reflecting the Association's enduring commitment to sustainability. With an increasing number of UK adults expressing a desire for their investments to make a positive impact alongside financial returns, the partnership with Tribe Impact Capital aligns perfectly with the Association's vision of doing well and doing good. We're delighted that going forward we'll be able to report to members on the impact of your investments, in addition to financial performance.

Tribe's investment philosophy revolves around the belief that one can achieve both financial success and positive societal impact. Our approach is straightforward: we invest in well-managed companies that are actively addressing global challenges. This dual focus, on financial returns and social responsibility, challenges the conventional notion that profit and purpose are mutually exclusive.

The rationale behind our strategy is grounded in the resilience of sustainable and responsible companies. We believe that companies addressing critical global challenges represent significant growth opportunities and we use the United Nations Sustainable Development Goals (SDGs) to help us define those areas. Our belief is that the businesses working towards solutions for pressing issues, such as clean energy, effective healthcare, education and financial inclusion, are positioned for future-focused growth.

Furthermore, by investing in businesses that prioritise ethical practices, environmental sustainability and social responsibility, we minimise exposure to risks associated with reputational controversies and customer apathy. The emphasis on well-managed enterprises reflects a commitment to avoiding poorly-run businesses and, instead, focusing on those poised for long-term success.

At Tribe we acknowledge the argument that investing exclusively in sustainable ventures may impose constraints on potential sources of return. However, we believe that all investments inherently involve constraints, as the sheer volume of possible investment avenues necessitates focus and specialisation.

CATE QUENTIN

Wealth Manager,
Tribal Impact Capital

Tribe | IMPACT CAPITAL

For more information contact

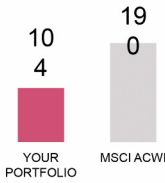
Cate Quentin
Wealth Manager
ciaram@tribeimpactcapital.com
0203 745 0989
www.tribeimpactcapital.com

Carbon metrics

The measurement of impact is constantly evolving, one of the measures we currently look at is carbon usage.

Carbon intensity*

The equities in your portfolio generate **45**% less CO_2 per million sales than the benchmark.



19 COMPANIES IN YOUR PORTFOLIO ACCOUNT FOR AROUND:

50% of the total carbon intensity

They include waste and water treatment companies in the heart of circular economy and renewable energy infrastructure companies which we know are more energy intensive.

Carbon saved*

By investing in your portfolio rather than in MSCI ACWI, you have saved **45** tonnes of CO_2. That represents:

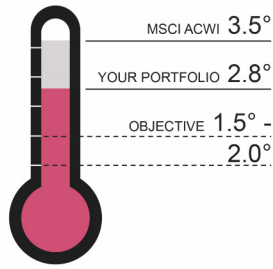
THE CARBON EMITTED BY:
55 flights
from London to New York in economy class**

THE CARBON SEQUESTERED BY:
749
medium grown coniferous tree seedlings grown for 10 years**

THE CARBON AVOIDED BY:
15 tonnes
of waste recycled instead of going to landfill**

Warming potential*

The companies in your portfolio, taking into account all products/services scope 1, 2, 3 emissions and the potential emissions reduction targets have an aggregated warming potential of **0.7°** less than MSCI ACWI.



* Based on covered listed equities (40% of total portfolio)
** Based on the US EPA Carbon calculator and climatecare.org flight calculator
*** Impact data is provided from the following sources: MSCI, Net Purpose Ltd, underlying company's latest available public reports and third-party fund holdings as at 30/06/2023. Reporting timetables vary company by company.

By narrowing our focus to well-managed companies addressing global challenges, we enhance our ability to identify and support businesses that align with your values.

The economic landscape further supports our investment strategy. The decreasing cost of renewable energy production due to technological advancements, heightened consumer awareness of environmental and societal impacts, and global regulatory commitments to decarbonisation create a favourable environment for companies focused on sustainability. It's in this context that we at Tribe believe impact investing is just good investing. Our partnership with the Association signifies a shared commitment to a future where investments thrive financially and contribute to the betterment of the world.

Tribe Impact Capital is the UK's first dedicated Impact Wealth Manager and offers discretionary and advisory portfolio management. Tribe was created in response to a significant increase in demand from individuals and charities who wanted to achieve both sustainable impact and a financial return from their invested wealth.

Tribe works in partnership with clients to gain a deep understanding of their values and how these align with the UN SDG framework. Going beyond traditional negative screens allows us to focus on positive selection of responsible, sustainable and impactful investments.

Tribe is a proud certified B Corps which means everything we do balances purpose and profit. As part of our commitment to achieving positive change, we have locked into our mission and model 20% of our profits to invest in high impact, scalable, mission-driven organisations.

LabMedUK24

Brighton 10–12 June

SUBMIT YOUR ABSTRACT

LabMedUK24 will be held at the DoubleTree by Hilton Brighton Metropole. Submissions are now open for the following:

Abstract/poster submissions

A successful submitter will be invited to display a poster or give an oral presentation at LabMedUK24. Your submission will be considered for one of the following awards or prizes, as indicated on your form:

- Audit Poster Prize – for audit abstracts
- Clinical Case Prize – for clinical cases abstracts
- Medal Award – for abstracts submitted by Members in training towards FRCPath

Please submit your abstract and select any prizes or awards you wish to enter by 09:00 on Tuesday 20 February 2024 (GMT). Send us your abstract through this online form.

Laboratory Medicine Foundation Award

The Laboratory Medicine Foundation Award is to recognise an outstanding contribution to Laboratory Medicine by an Association Member, who is normally resident in the UK or Republic of Ireland. Nominees can be proposed by all Members of the Association. Members can also self-nominate for this award. We highly encourage you to champion those who have inspired the profession, as this is a way to celebrate one another's achievements and build a better sector for us all. The deadline for submitting a nomination is 09:00 on 31 January 2024 (GMT). For further information on how to apply and scoring criteria, please click here.

Impact Award

The Impact Award celebrates the improvement of a service in which one or more of our members have participated. It promotes the important work occurring on a daily basis in our profession that has had a positive impact in at least one area of Laboratory Medicine. These can include the patient pathway, health systems and services, the laboratory workforce, environmental sustainability and inclusive healthcare. Any Member of the Association actively working in Laboratory Medicine can self-nominate for the Impact Award, as an individual or a group, by 09:00 on 28 February 2024 (GMT). Send us your Impact Award submission here.

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BOOK NOW FOR LABMEDUK24 EARLY BIRD SAVINGS

Book before April 12 to benefit from the 'early bird' prices. Priority will be given to Trainees who are LabMed Members for the Training Day. Association Members receive discounted rates at LabMedUK24. All invoices must be paid in full by 12 April or booking will be cancelled and reinvoiced at the full rate.

Booking open

We were excited to launch the new website for LabMedUK24 in January. With an exciting range of topics such as paediatrics, AI, mass spectrometry in the clinical laboratory, home sampling, specialist endocrinology, faecal testing, myeloma, vitamin B12 testing and lab management, we really believe there is something for everyone.

We will also run our popular plenary sessions: the ADLM International Award Lecture, Impact Award, Freddie Flynn Lecture, Interactive Clinical Cases, Laboratory Medicine Foundation Award and Medal Award presentations.

For full details on the exciting range of topics within the programme, please visit the website.

		Full price	Early bird price (until 12 April)
Training Day	Members	£110	£90
	Non-Members	£175	£140
LabMedUK24 one-day ticket	Members	£250	£200
	Non-Members	£385	£310
LabMedUK24 two-day ticket	Members	£445	£355
	Non-Members	£695	£555

Read more here about the National Meeting awards and prizes, including eligibility criteria, selection process and more

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NOMINATE NOW FOR MEMBERSHIP AWARDS 2024

Nominations for this year's Awards are invited from Regional Committees, together with a citation of about 500 words, outlining the basis of the nomination. The closing date for nominations received by Council is 22 April 2024. The Award must be approved by Council at its meeting in May 2024 and it is important that the Regional representative is able to extol the virtues of the nominated individuals. The three Award categories are:

Emeritus Member

Persons who have been Members of the Association for at least ten years and have retired from full-time employment and who have made an exceptional contribution to the objectives of the Association may, on the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected Emeritus Members of the Association.

Fellow of the Association

Persons who have been Members of the Association for at least ten preceding consecutive years and have retired from full-time employment may, on the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected to the category of Fellow of the Association.

The recipients have made a significant contribution to the profession in one or more of the following areas:

- Continually led and instigated changes to meet the needs of Laboratory Medicine services on behalf of a region or nationally.
- Developed exceptional educational and/or training facilities for the profession.
- Led in setting up and developing, over a considerable period of time, a well-respected and valued specialised service that had a major impact either within a region or nationally.
- Raised the profile of the profession over many years, within the lay or clinical community, either regionally or nationally.

Honorary Member

Persons who have made a distinguished contribution to Laboratory Medicine at international level may, following the recommendation of Council and by a majority of at least two-thirds of those voting at a General Meeting, be elected Honorary Members of the Association.

If you would like to propose someone then contact your Regional Secretary. Proposals must be supported by the Regional Committee and the nomination submitted through the Regional Committee at the Council meeting in May 2024.

I REMEMBER WHEN...

WILLIAM MARSHALL

The most frequently requested biochemical measurement must be 'U and Es', typically comprising a minimum of urea, sodium and potassium. The interpretation of changes in urea and potassium concentrations is usually straightforward, but to sodium concentration must be awarded the title of 'The Most Frequently Misunderstood Measurement' that we provide our clinical colleagues – the most frequent error being to suppose that hyponatraemia is likely to relate to sodium deficiency rather than water excess.

Sodium is now measured using ion-selective electrodes, which came into use in the 1980s. Before this, measurements relied on atomic emission spectrophotometry (flame photometry), but I have been unable to discover when this technique was introduced to clinical chemical laboratories. It is likely to have been in the late 1930s or 1940s as Harrison's *Chemical Methods in Clinical Medicine*, 2nd edition 1937 makes no mention of it. Harrison was (as it happens, like me) a Reader in Chemical Pathology at the University of London who practised at King's College Hospital and his book was the standard work in the field at the time.

He describes two methods for measuring sodium: one colorimetric, one gravimetric. The colorimetric method involved precipitation of proteins with trichloroacetic acid; the supernatant was treated with a solution of alcoholic zinc uranyl acetate solution, resulting in the formation of a precipitate of sodium zinc uranyl acetate. The precipitate was washed and treated with potassium ferrocyanide, resulting in the formation of (soluble) uranyl ferrocyanide, which has a plum-red colour and could be compared with standard sodium chloride solutions treated in exactly the same way and at the same time.

The gravimetric method was equally as complex, requiring heating of a serum sample with sulphuric and nitric acids (to destroy organic matter), precipitation with sodium zinc uranyl acetate then harvesting, drying and weighing the precipitate. Standards and blanks were treated similarly.

Harrison does not refer to measurements of potassium, but the sequence of their introduction was similar, with first a gravimetric method, then flame photometry and now ion-selective electrodes.

▶ *Continued on page 16*

▶ *Continued from page 15*

The main use of serum sodium measurements before the introduction of modern methodology was to support a clinical diagnosis of Addison's disease. Clearly, the measurement was not something to be undertaken (or even requested) lightly, nor the results to be made available rapidly in an emergency. Harrison lists some other causes of hyponatraemia, including severe sweating, diabetic ketoacidosis and diarrhoea, but points out that in such conditions, measurement of sodium was rarely of diagnostic value though a result might inform appropriate treatment. It is difficult to estimate how long these methods took to produce a result: hours certainly. Too long even for the former day-long MRCPath 'wet practical'. One can only admire the skills of the technicians (as they were called) of that time, both those performing them in the diagnostic laboratory and those who developed these methods in the first place.

RETIRED MEMBERS' GROUP

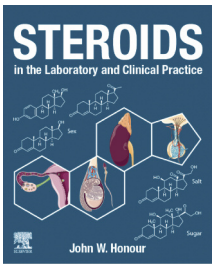
A huge thank you to Ruth Lapworth who set up the Retired Members' Group in 2014 and has now decided that it is time for her to step away from the role after nearly 10 years. If there are any recently retired members who are interested in being involved in arranging meetings of the Group then please contact mike@labmed.org.uk

As a reminder, our Retired Members are always able to attend their regional meetings free of charge to keep up-to-date with what is going on in Clinical Biochemistry.

Ruth received an MBE in 2012 for her dedicated service to healthcare

BOOK REVIEW

STEROIDS IN THE LABORATORY AND CLINICAL PRACTICE



In September 2023 Elsevier published *Steroids in the laboratory and clinical practice* (ISBN 97801 28181249) written by John Honour. This was largely a project when John, in 2021 and 2022, on Government advice, was "shielding" from the SARS COVID-19 pandemic. It was based on 45 years' experience in steroid laboratories attached to teaching hospitals. On ward rounds he saw the sick children with adrenal disease and encountered the parents of children who could not answer the question everyone asked them "is it a boy or a girl". He learnt that the laboratory needed to act promptly on any investigations of these patients. Clinicians struggled with the chemistry of steroids despite what seems to be a structure of four rings. To clinicians the steroid path when drawn-out looks like chicken wire so he found a gentle approach to help them to understand steroid chemistry.

The book covers in three parts basic chemistry, methods for steroid analysis and clinical application of steroids in a single source. The comprehensive reference book addresses the specificity of steroid determinations to clarify confusion arising from the laboratory results. The book covers important advancements in the field and is a valuable addition in the literature addressing gaps in existing knowledge. This will be a "must have" reference for pathologists, laboratorians, endocrinologists, analytical/clinical chemists and biochemists. The book is particularly useful in three areas:

- Addresses the normal production of steroids and concentrations found in biological fluids and tissues
- Presents the changes in steroid concentrations at life events as reference points for clinical investigations
- Reviews the genetic disorders of steroids in relation to specific enzyme changes and clinical presentation.

No such book had been published since *Steroid Hormones* by David Gower in 1979, but much has changed since then. The book ended up as a 988-page monster from nearly 320,000 words, unfortunately as a paper back. It's around 3 kg so if you are reading in bed don't let it drop off the bed when you go to sleep! There are more than 730 figures and 120 tables to enhance comprehension of the wide-ranging and often complex material.

This should become the "go-to" book for answers to questions around steroids. These hormones and their metabolites, once considered inert, are now all playing important pivotal functional roles. John's professional journey provided him with unmatched broad experiences of steroids in clinical practice that enabled him to write the book for others to benefit.

REGISTER FOR THE LEARNING ACADEMY

The Laboratory Medicine Learning Academy will be open for new learner registrations from 1 March 2024. For more information, including how to join, please visit our website.

In 2023 the Association for Laboratory Medicine partnered with Health Education England, East of England (HEEOE) for a two-year project to design and launch the new Laboratory Medicine Learning Academy. Recently we completed the next stage of the development process, with the publication of the pilot course on the topic of Laboratory Method Evaluation. The course has been tested by a cohort of 50 members who have provided valuable feedback on its content as well as the functionality of the digital learning platform.

We are now moving into the next phase of the project and have started approaching authors for the nine remaining courses that the Education, Training and Workforce Committee have chosen to prioritise.

As part of its pilot stage in 2024 the Learning Academy will be offering courses on the following topics:

- Endocrine (including dynamic function tests)
- Clinical: Bone and Nutrition
- Clinical: Cardiology, Hepatology and Renal
- Clinical: Diabetes, Lipids, CV risk and Obesity
- Clinical: (Adult) Inborn Errors of Metabolism and Newborn Screening
- Laboratory Analytical skills
- Laboratory Data Interpretation
- Laboratory Management
- Laboratory Method Evaluation
- Toxicology

AVI SURSKAS
Digital Learning Officer

Additionally, we will populate our digital learning platform with new and existing resources aimed at assisting trainees with preparations for FRCPath examinations as well as supporting our members with their continued professional development. By offering high quality, expert-led content that can be accessed whenever and from wherever they want, the Learning Academy will enable its users to:

- Develop highly valued new skills and knowledge to ensure best practice in both laboratory analytical science and management and in laboratory medicine-related clinical work.
- Develop the ability for better planning and decision making.

The Association has recently appointed a new Digital Learning Officer, Avi Surskas, to support authors with the production of digital content and is now looking to establish an Editorial Board. If you are interested in volunteering for this position or would like to become an author for the Learning Academy, please visit The Association for Laboratory Medicine vacancies page.

SUDOKU ... THIS MONTH'S PUZZLE

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		R	I					
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	C			R			S	
		H	M					
					R	I		
	S			C			Y	
		M	H					

SOLUTION FOR DECEMBER

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

PUBLICATION DEADLINES

To guarantee publication, please submit your article by the 1st of the preceding month (i.e. 1 March for April 2024 issue) to: editor@labmed.org.uk

We try to be as flexible as possible and will accept articles up to the 20th 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.

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:

Dr Ailsa Hamilton, Chemical Pathology Trainee, Blood Sciences, NHS Tayside, Dundee

Miss Karen Adler, PhD Student/Microbiologist, Genetics and Genome Biology, University of Leicester, Leicester

Mr David McClelland, Trainee Clinical Scientist, Clinical Biochemistry, Belfast Health and Social Care Trust, Belfast

Miss Danielle Purewal, Trainee Clinical Biochemist, Clinical Biochemistry, Imperial College Healthcare NHS Trust, London

Miss Eleanor Finnie, Trainee Clinical Scientist, Microbiology, UK Health Security Agency (UKHSA), Birmingham

Miss Georgina Lynch, Trainee Clinical Scientist, Microbiology, Royal Lancaster Infirmary, Lancaster

Miss Kathryn Dent, Biomedical Scientist, Clinical Biochemistry, The Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle Upon Tyne

Mr Harvey Kwan, Trainee Clinical Biochemist, Clinical Biochemistry, Royal Surrey NHS Foundation Trust, Guildford

Dr Mir Furruq Ali Quadri, Speciality Registrar in Chemical Pathology (Metabolic Medicine), Chemical Pathology, Queen Elizabeth University Hospital, Glasgow

Ms Caroline Joyce, Principal Clinical Biochemist, Clinical Biochemistry, Cork University Hospital, Cork

Dr Bhuvaneswari Gopalakrishnan, Sheffield

Dr Stuart Bennett, Principal Clinical Scientist, Pathology, East & North Hertfordshire NHS Trust, Stevenage

Dr Eleanor Parker, Senior Research Scientist and Trainee Clinical Scientist, South London Specialist Virology Centre, King's College Hospital, London

Ms Aisling O'Brien, Medical Scientist, Clinical Immunology Laboratory, Cork University Hospital, Cork

Dr Ursula Gerike, Biomedical Scientist, Clinical Biochemistry, Royal United Hospitals Bath NHS Foundation Trust, Bath

Mr George Kirke, Associate Technical Manager, Department of Science and Transformation, Cignpost Diagnostics, Guildford

Mr Harry Cobb, Trainee Clinical Scientist (Biochemistry), Clinical Chemistry, Royal Cornwall Hospitals NHS Trust, Truro

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UKKA PATIENT SAFETY ALERT ON CREATININE ASSAYS AND eGFR EQUATIONS

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Why was the patient safety alert published?

Chronic kidney disease (CKD) is a progressive condition affecting 9-13% of the population worldwide.[1] It is independently associated with increased risk of cardiovascular events, end-stage kidney failure and premature death. Furthermore, with advancing CKD, risk of adverse events and hospital admissions increases, with a two-fold increase in mortality reported from CKD stage 3A to 3B.[2] Diagnosis and classification of CKD is performed using estimated glomerular filtration rate (eGFR) and urine albumin: creatinine ratio (UACR) results.[3] As CKD treatment options, prescribing practice, speciality referrals, the Kidney Failure Risk Equation (KFRE) and planning for renal transplant and/or dialysis are all based on eGFR thresholds,[4] it is therefore imperative that standardised eGFR measurements are used to inform such decisions.

The 2021 National Institute for Health and Care Excellence (NICE) CKD guideline recommends laboratories use the enzymatic serum creatinine assay and the 2009 CKD Epidemiology Collaboration (CKD-EPI 2009) equation without an ethnicity co-efficient to calculate eGFR.[3] However, a recent audit of creatinine and eGFR measurement by UK National External Quality Assessment Services reported that 31% of respondents used the modified Jaffe method, 32% still used the Modification of Diet in Renal Disease (MDRD) eGFR equation and 15% were using the ethnicity coefficient. In addition, 19% of respondents reported using a different eGFR equation from what appeared to have been used for the submitted eGFR results.[5]

Serum creatinine assays: The intraindividual biological variation of the serum creatinine enzymatic and modified Jaffe methods are similar, 4.4% vs 4.7% respectively. The enzymatic method is recommended by NICE due to having reduced interference from chromagens such as bilirubin or ketones, superior analytical precision

UKKA
UK Kidney Association

(1.2%-3.4% vs 2.5-5.8% respectively) and is more accurate at lower creatinine concentrations (e.g. <55 µmol/L).[6-9]

eGFR equations: The two main eGFR equations used clinically worldwide are the MDRD equation and the CKD-EPI equation.[10] The CKD-EPI equation was created in 2009 and can be used with or without an ethnicity coefficient (the latter is now recommended by the UKKA, NICE and the American Society of Nephrology).[11] The CKD-EPI creatinine-based 2009 equation, compared to the MDRD equation, has lower median bias (2.5 vs 5.5 mL/min/1.73 m^2) of eGFR against measured GFR.[11] In addition, it performed better when eGFR was >60 mL/min/1.73m^2. A limitation of the MDRD equation was its increased bias of 8.7% above this threshold and one of the reasons why reporting of eGFR previously had a cut-off at 60 mL/min/1.73 m^2.
The clinical impact of which equation is used is substantial, with Matsushita *et al.* reporting CKD stage reclassification for 30% of their cohort (n= 1.1 million) and improved mortality and end-stage kidney failure risk categorisation using the CKD-EPI 2009 equation compared to MDRD.[12]
In November 2021, the CKD Epidemiology Collaboration Group released an updated 2021 equation which is ethnicity neutral.[13] However, it is important to recognise that this equation is different from the 2009 version, and has not yet been validated in a UK population and therefore is not currently recommended for use in the UK.

The Patient Safety Alert

In response to the variation in creatinine assay and eGFR equations in use across the UK, the UKKA in October published a patient safety alert along with five key recommendations.[14] This was co-developed and endorsed by the UKKA GFR Working Group, UKKA Patient Safety Committee, the Association for Laboratory Medicine, UK Renal Pharmacy Group and the UK National External Quality Assessment Services.

The recommendations are:

- All UK laboratories should use the enzymatic method for the measurement of serum creatinine concentration.
- All UK laboratories should use the CKD-EPI 2009 equation without ethnicity co-efficient for the calculation of estimated glomerular filtration rate (eGFR).
- CKD-EPI 2021 'ethnicity-neutral' equation should NOT be introduced until further validation in a UK cohort.
- All Trusts and laboratories should report the method of creatinine (e.g. enzymatic) and the specific eGFR equation (e.g. CKD-EPI 2009) used alongside these results.
- Development of "UKKA GFR Champions" at tertiary nephrology centres to work with local Trusts, nephrology teams and laboratories; with the aim to assist with the implementation of these and future recommendations, and to strengthen the collaboration between laboratory and nephrology services.

Conclusion

The variation of eGFR equations and serum creatinine assays may lead to clinically significant inconsistency and inaccuracy in kidney function estimation. This may impact prescribing cardioprotective medications, staging severity of disease and planning advanced CKD care. The UKKA safety alert highlights the importance of a standardised approach to serum creatinine measurement and eGFR calculation in the UK. Laboratories and nephrology services are encouraged to work together, alongside patient advocacy groups, to establish transparent, standardised kidney function reporting to ensure they are in line with the recommended NICE guidance.

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DEACON'S CHALLENGE REVISITED

NO 29. ANSWER

The analytical imprecision (CV_a) of serum iron in your laboratory is 10%. Iron was measured on several occasions in healthy volunteers, and the within-subject coefficient of variation of the measured iron results was found to be 15% (calculated using nested ANOVA). Estimate the true biological coefficient of variation in serum iron.
Calculate the expected coefficient of variation of the results in these volunteers if the analytical procedure is performed in duplicate (on a single sample per patient with results expressed as the mean of the duplicate determinations) instead of singlicate.

The square of the total CV is equal to the sum of the squares of the component CVs:

$$CV_t^2 = CV_b^2 + CV_a^2$$

where CV_t is the total coefficient of variation = 15%

CV_b is the biological coefficient of variation = ?

CV_a is the analytical coefficient of variation = 10%

Substitute values for CV_t and CV_a and solve for CV_b:

$$15^2 = CV_b^2 + 10^2$$

$$CV_b^2 = 15^2 - 10^2 = 225 - 100 = 125$$

$$CV_b = \sqrt{125} = \mathbf{11.2\%}$$

If replicate measurements are made on the same sample, then the standard deviation (SD) of the mean (called the standard error, SE) depends on the number of replicates (n):

$$SE = \frac{SD}{\sqrt{n}}$$

Since for single measurements, $CV(\%) = \frac{SD \times 100}{Mean}$

For replicate measurements, CV(%) =

$$\text{singlicate. } \frac{SD \times 100}{Mean \times \sqrt{n}} = \frac{\text{singlicate CV\%}}{\sqrt{n}}$$

Therefore the analytical CV for duplicate measurements =

$$\frac{10}{\sqrt{2}} = \frac{10}{1.41} = 7.07\%$$

from which the new total CV can be calculated:

$$CV_t^2 = 11.2^2 + 7.07^2 = 125 + 50 = 175$$

$$CV_t = \sqrt{175} = \mathbf{13.2\%}$$

Question 30

A man has a PSA of 5 µg/L. Twenty-two percent of patients with benign prostatic hypertrophy and 38% of patients with prostatic cancer have concentrations of PSA between 4.1 and 10 µg/L.

What is the positive predictive value for a diagnosis of cancer of the result for this man in this range, if the prevalence of cancer in his age group is 5% and benign prostatic hypertrophy is 20%? Assume 2% of patients without any prostatic pathology have a PSA >4.1 µg/L.

POINT-OF-CARE TESTING; THE MARMITE OF PATHOLOGY, CRUMPETS ANYONE?

KATY HEANEY
POCT Specialty Lead, Consultant Biochemist, Berkshire & Surrey Pathology Services

2023 saw some giant milestones reached in the field of Point-of-care testing (POCT) and 2024 has even greater potential for raising the profile. I am aware it is considered the marmite of pathology, loved by some and hated by others, but the toaster has popped, and some are certainly adding it to their crumpets. It is important for Pathology to commit to leading the way in setting out how POCT is used and how to ensure high quality results and safe use for patients.

Guidance for all

National strategic guidance was released by the pathology professional bodies, the IBMS, the Association for Laboratory Medicine and the Royal College of Pathologists in May 2023. A long-awaited document, given the last professional body guidance was released over 10 years ago, the 2023 document covered generic areas of consideration and posed a number of questions to aid consideration of all angles of implementation. Targeted POCT guidance was released by a collaboration of NHS England speciality teams for urgent community response and virtual ward services in August 2023, written more for the commissioners and those working in the service, with multiple reference to working in collaboration with Pathology staff. In 2024 the CSO office is planning to release a framework for POCT implementations in infection diagnostics. I expect more guidance to be released in 2024 to target clinical services and for commissioners of services. I hope for more guidance at integrated care system level to review POCT needs and to bring about further collaboration, again requiring Pathology leadership in this growing area of interest.

National conversations

In July 2023 I was asked to join the NHS England Diagnostics Clinical Advisory group as a POCT specialist. Chaired by Sir Professor Mike Richards this group covers the four diagnostic programme pillars (imaging, pathology, endoscopy and physiological sciences) and the Community

This article is for the lovers of POCT and maybe some middle grounders who can join us in the path to better POCT – accurate, well governed, resourced and safe POCT.
No test is perfect, but an imperfect test can be used if we understand it.

POCT-focussed talks were well received at UKMedLab23 from Fiona Riddoch and Bethan Phillips

Diagnostic Centres (CDCs), providing strategic clinical advice and guidance to support the delivery of diagnostics recovery and renewal, the long-term plan and elective recovery plan. Discussion in this group is wide-ranging and enlightening but leaves no doubt that working in collaboration is essential, combining rapid diagnostics across the pillars equates to greater gains than its individual parts and workforce pressures affect every diagnostic pillar.

In November 2023, the NHS England Pathology Transformation programme invited pathology network leads to the opening meeting of the Pathology POCT subgroup, endorsed by the National Pathology Stakeholder Board this group will provide expertise and governance for IVD POCT within NHS England. National Deputy Director of Pathology, Jane Mills, hopes that this group will help gain a better understanding of the requirements across all of the domains that we are currently using to assess pathology networks; governance, leadership, operational models, quality, digital, workforce, supply chain; but through the lens of the IVD-POCT service. I look forward to the outputs from this group and I hope this contributes to pathology network wide leadership of POCT which from my own experience can bring about significant benefits for clinical pathway harmonisation and financial efficiencies.

It is noteworthy that colleagues in the devolved authorities, particularly Wales, have achieved more national leadership in POCT than England in previous years. I commend their ambition and achievements for example in national IT integration and applaud their ability to provide advice from an expert group. I had the pleasure of seeing a particularly well written response from the Welsh group on the use of POCT devices in the assessment of neonatal hypoglycaemia which I am pleased to say contributed enormously to the soon to be published updated British Association of Perinatal Medicine's hypoglycaemia framework. The previous guidance rightly ruled out the use of any glucose meters in the assessment of hypoglycaemia, when actually there are now some meters on the market that are capable of accurate low glucose results in trained hands and this can bring about significant benefits including faster results, reducing unnecessary result production from a blood gas profile and a requirement for less blood volume. The guidance states clearly collaboration with pathology on device purchases and understanding the performance of a device is critical.

Collaboration with industry

Relationships between pathology POCT and manufacturers is a bumpy ride at times. Strong leadership in an NHS institution will enable manufacturers to know who to approach and collaborate with to positively implement POCT with good governance and resourced support for services. A lack of leadership from pathology's side leaves gaps in this governance, and sadly some manufacturers have taken advantage, often in my experience to the detriment of long-term implementation of a POCT device due to poor financial clarity. Consequently, in the worst cases, due to poor quality results, services lose confidence in the purchased kit, and resources and time are wasted on both sides.

In October 2023, a new format for collaborative meetings was hosted by the NHS England CSO officers and the National Institute of Healthcare Research Biomedical Research Centre in Leeds, supported by BIVDA and ABHI, spent a day discussing infection diagnostics. With an introduction from Professor Sir Chris Whitty and then a grounding video from a patient ambassador of Antibiotic Research UK about her life with an antibiotic resistant urinary tract infection (Ronda's story, www.antibioticresearch.org.uk), the mixed attendees from NHS, academia, professional bodies, AHSNs, manufacturers and third-party suppliers attended a series of workshops to discuss the role of infectious diagnostics in acute care and primary care.

The next event in the Moving Forwards Diagnostic series will focus on target product profiles (TPPs) for anti-microbial resistance and infection diagnostics. It is hoped the series will continue with events on regulation, validation and implementation in the future. I look forward to seeing more of this meeting format in which we all take a more active role in informing of the diagnostic need from our manufacturer colleagues, rather than the more passive role of the past of accepting only what is offered.

World-wide

Interest in POCT high-sensitive troponin continues with large scale studies taking place in the USA, Australia and New Zealand. The IFCC Live webinar series in which the Committee on the Clinical Application of Cardiac Biomarkers invites guest speakers to share their knowledge is particularly good for informing on the latest research in this area. I enjoy Dr Paul Collinson's chairmanship of these and hope for more insight in 2024 as to how this test can benefit the UK NHS system, as I do believe that just introducing a faster device in this pathway will be insufficient in bringing about the benefits our Emergency Department colleagues so sorely need.

My last reflection came about over a festive meal in December. A family member had recently presented at the Vaccine Cold Chain and Technology symposium in Kigali, Rwanda. The pandemic challenged the delivery of routine vaccines by pressurising both the cold chain capacity for vaccine storage and record keeping in remote healthcare settings. POCT tests are being designed to demonstrate immunity, allowing targeted vaccinations, resulting in better use of precious cold chain storage and reduced wastage of vaccine supplies. This is so far apart from the UK POCT routine conversation it helps me put into context our local wobbles over this device or that.

THE DIGGLE MICROBIOLOGY CHALLENGE

These questions, set by Dr Mathew Diggle, are designed with Trainees in mind and will help with preparation for the Microbiology Part 1 FRCPath exam.

Question 40

True or false, which of the following viruses are transmitted from animals to humans:

A) Influenza A H5N1

B) HTLV-1

C) Hantaviruses

D) Poliomyelitis

E) Rabies

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

Question 39 from the December issue

Please answer each statement as true or false:

A) *Salmonella typhi* is motile

B) *Salmonella typhimurium* is one of the most strictly host-specific of all the food poisoning organisms

C) Coxsackie B virus is frequently associated with pleurodynia

D) Respiratory syncytial virus (RSV) is frequently associated with chronic bronchitis

E) Ethylene oxide is effective as a sterilising agent within a limited range of conditions of temperature and humidity

F) A notable feature of influenza virus, type A (Flu A), is its ability to change its antigenic structure

G) *Tubercle bacilli* are acid-fast.

Answers

The following are all true:

A) Salmonella typhi strains demonstrate both swarming and swimming motility.

C) Anyone who's infected with coxsackie B virus is at risk for developing pleurodynia, which is a form of viral myalgia defined by the sudden occurrence of lancinating chest pain or abdominal pain, commonly associated with fever, malaise and headaches.

E) Ethylene oxide (EO) is one of the most used agents in chemical sterilisation. However, EO is a colorless gas that is flammable and explosive. The four essential parameters (operational ranges) are: gas concentration (450-1,200 mg/L); temperature (37-63°C); relative humidity (40-80% – water molecules carry ETO to reactive sites); and exposure time (1-6 hours).

D) RSV can cause more severe infections such as bronchiolitis, which is an inflammation of the small airways in the lung. It is the most common cause of bronchiolitis and pneumonia in children younger than one year of age.

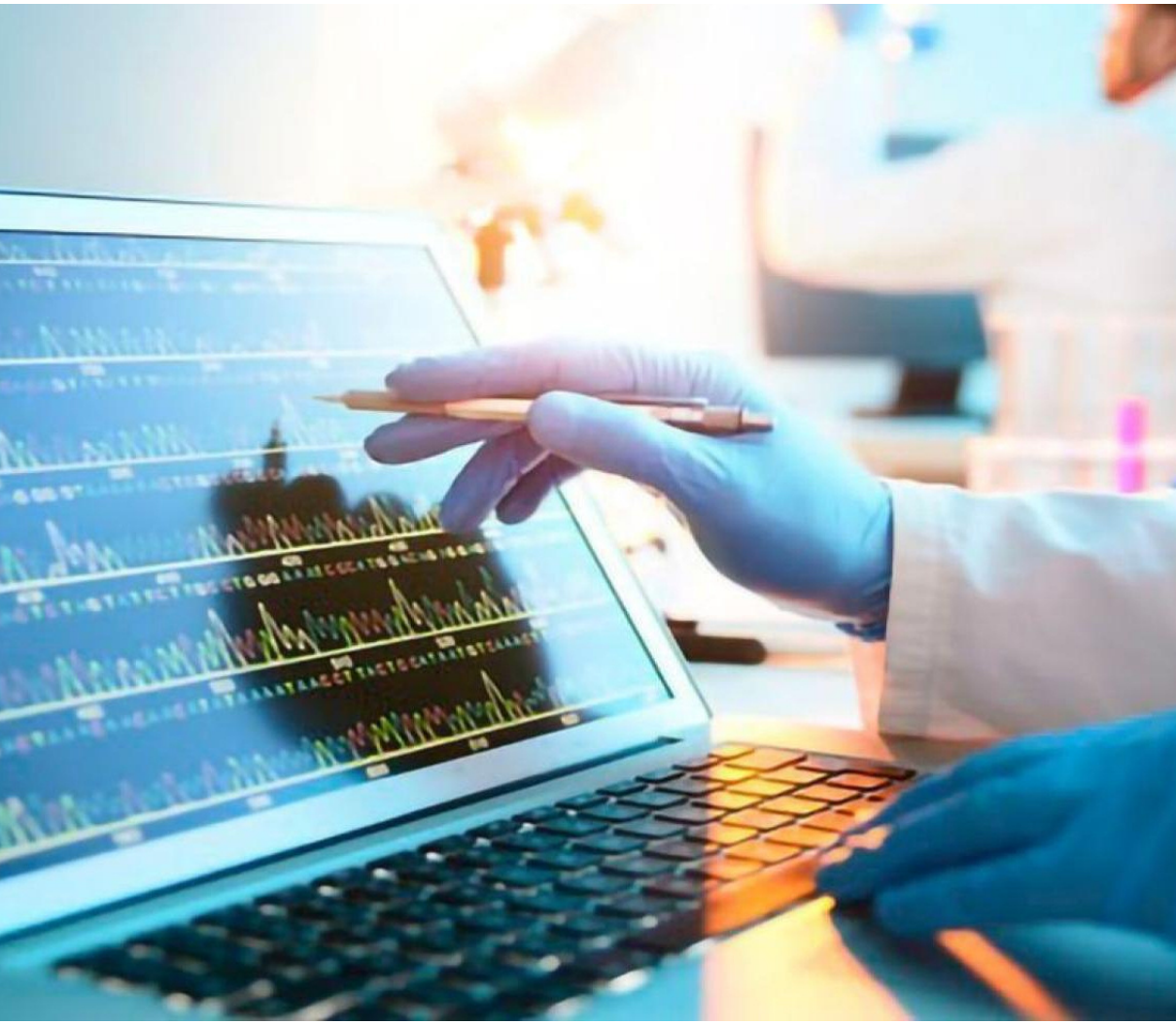
F) Flu A viruses undergo both antigenic drift and shift and are the only flu viruses known to cause pandemics, while flu type B viruses change only by the more gradual process of antigenic drift. Flu A virus possesses a segmented genome of eight

negative-sense, single-stranded RNAs which allows the exchange of gene segments between viruses that co-infect the same cell, which can result in the formation of progeny viruses that are genetically distinct from both parental viruses.

G) *Tubercle bacilli* are the bacteria that cause tuberculosis. Due to their waxy cell wall components, the bacilli of MTB are acid fast; that is, they retain the red dye, carbol fuchsin, after rinsing with acid solvents.

The following statement is false:

B) *Salmonella typhimurium* has been thought of as the prototypical broad-host-range serotype, since it is frequently associated with disease in numerous species, including humans, livestock, domestic fowl, rodents and birds.



THE BSI-CIPN CONFERENCE: A TRAINEE'S PERSPECTIVE

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In December, three Immunology Trainee Clinical Scientists set out on our first national conference, known as the BSI-CIPN conference, held in Belfast's International Convention Centre (ICC) for four days. For those who are unaware, the Clinical Immunology Professional Network (CIPN) is a newly established forum within the British Society of Immunology (BSI), formed when the UK Primary Immunodeficiency Network (UK-PIN) formally merged with BSI. This was the first BSI-CIPN conference since its formation. Our experience of the BSI-CIPN conference was excellent and we hope that this article will give you an insight into the highlights from the event.

The recent BSI-CIPN merger meant that there was a range of academic and clinical immunology topics being discussed throughout the conference. This promoted exposure to new topics and perspectives of immunology. The conference was structured so that the bulk of the clinical content was covered as part of the two-day BSI-CIPN conference. The BSI Congress took place on the following two days for those who wished to extend their stay in Belfast and get the full BSI experience.

Monday kicked off with a captivating series of plenary lectures featuring Fiona Pearce and Nicholas Rider, guiding us through current developments with population data in Immunology. Fiona Pearce, a Clinical Associate Professor at NIHR, highlighted some groundbreaking successes. The work identified 170,000 patients with rare autoimmune rheumatic disease using national datasets. Using this, the team could recruit participants to studies linking these diseases to COVID-related vaccine immunity, hospitalisations and deaths. Nicholas Rider, a Professor in Paediatrics from Liberty University college of Osteopathic Medicine in Virginia, discussed a pipeline for the use of an open-source AI software (SPIRIT analyser) to better predict the diagnosis of Inborn Errors of Immunity (IEI). It could do this by using population-level data, such as gender, birth date, ICD codes (disease codes), CPT codes (service codes) and the amount paid for the visit. Rider demonstrated how this software had proven successful in improving the identification of babies with possible IEI in

The International Convention Centre in Belfast was the venue for the BSI-CIPN conference in 2023

the United States. These are some really exciting ways that show further modernisation and advancement of immunology. However, both speakers stressed that finding ways to access and clean the data is still a challenge, although Pearce highlighted some new developments with NHS Digital, Health Data Research UK, and the Sudlow Review which will hopefully help to progress this.

After this, a further plenary talk was given by David Thomas, a Professor of Renal Medicine at the University of Cambridge, on new insights into chronic granulomatous disease, a disease where genetic mutations disrupt the ability of neutrophils to kill bacteria and fungi by oxidative burst. David presented recent discoveries in the biology of the phagocyte NADPH oxidase, discussing the implications of both a lack of, and excess of, reactive oxygen species production. The talk took particular interest in the chaperone EROS, highlighting EROS-deficiency as a novel cause of chronic granulomatous disease.

This talk was not David's only contribution to the conference on the opening day. He was joined by Claire Booth, a Professor of Gene Therapy and Paediatric Immunology at UCL, for a friendly 'fireside chat' on whether clinical immunology research should be left to Clinical Immunologists. Despite the intended controversy of the topic, this session had a very light-hearted feel to it with plenty of chance for audience participation. A great way to round off the morning. At this point, it was time for lunch. For such a well-attended conference, the catering did not disappoint. There were refreshment stations dotted around the ICC with endless supplies of tea, coffee and snacks. The caterers were fully prepared for the lunch-time rush too, with takeaway-style lunch boxes packed with freshly cooked food.

On both days, lunch was followed by a series of parallel sessions; each session consisted of a collection of talks related to a specific theme. While this could often leave us in a

dilemma, it was possible to dart between meeting rooms should you wish to see a bit of both. On Tuesday afternoon, attendees had a choice between allergy and gene editing. A few of us went to allergy and heard about some really interesting developments. Louise Savic, a Consultant Anaesthetist at Leeds Hospital, began the allergy session with an eye-opening talk on penicillin allergy de-labelling. The stand-out figure from this talk was that as many as 95% of penicillin allergy labels are incorrect, the ramifications of which are severe for both patients and the NHS. Louise described the need to up-scale de-labelling tests as clinically imperative, but unachievable with the current model. She set out guidelines for a new model engaging non-allergists to help contribute to this service. Listening to the collaborative work from the clinicians and scientists to generate recommendations for the de-labelling of penicillin allergy nationwide and the handling of such a vast amount of data was incredibly impressive and identified potential roles for us as clinical scientists in the future.

Another talk, by Daniel Conn, a PhD student at the MRC Centre for Medical Mycology, talked about the relationship of *Aspergillus Fumigatus* spores and allergic asthma. Hearing the logical work-through of identifying a particular protein expressed at a certain time point and the many techniques utilised to confirm this was remarkably interesting, especially as this is something completely different to the work we do in the diagnostic lab.

Finally, a discussion on peanut immunotherapy by Jonathan Hourihane, a Consultant Paediatrician at CHI, was fantastic. While our academic course teaches us about the potential benefits of immunotherapies for allergies, it was fascinating to see how leading consultants with years of experience in the field would debate on the best evidence-led strategies.

Seeing a range of poster presentations from scientists and clinicians was great; it allowed us to further scope into our points of interest and discuss it with the researchers. The posters had a wide range of academic and clinical research, focusing on diagnostics, therapies, pathophysiology and public outreach, so there was plenty for everyone!

A quick word of appreciation for the sponsors too; during breaks from the talks, there were plenty of opportunities to meet with a range of companies that provide assay technology and equipment to both academic research and clinical diagnostics, allowing us to stay up to date with the current technologies!

A special mention for innovative thinking needs to go to Anne Moore, a Senior Lecturer at the University of Cork, and her team for their exciting innovation.
Anne presented on their research into a new vaccine delivery technology which involves dissolvable microarray patches. These cutting-edge patches contained microneedles made from the vaccine itself. Once these needles had penetrated the skin, they could then dissolve. It was incredibly interesting to see the step-by-step progress to improve the product.

Beyond the lectures, the social side was just as rewarding. Networking with Clinical Scientists from across the country, sharing stories and gaining advice on research projects made this experience invaluable. And as for Belfast, attending a conference is not just about the conference halls; there's a whole city waiting to be explored.
From traditional Irish pubs to restaurants on the River Lagan there was plenty to do outside of conference hours. For fellow Trainees and STP training officers, attending the BSI-CIPN Congress is a collective must-do during your training journey.

GREEN CHAMPIONS

A SHINEY FUTURE FOR SUSTAINABLE HEALTHCARE

ANNA SANDERS AND ALISON JONES FROM THE GREEN CHAMPIONS GROUP

Looking for ways to showcase some of the laboratories leading the way in clinical laboratory sustainability, the Green Champions group are pleased to present this question-and-answer interview with Joanne Hall, Deputy Operations Manager for Blood Sciences, and Blood Sciences Sustainability lead at Newcastle Laboratories. For those of you that are just taking your first steps into sustainability, Joanne's words will hopefully inspire you to act!

What was your journey into laboratory sustainability?

In 2019, Newcastle upon Tyne Hospitals NHS Foundation Trust was the first healthcare organisation in the world to declare a climate emergency and committed to being Net Zero Carbon by 2040. The Trust created the 'Sustainable Healthcare In NEwcastle' (SHINE) brand; and in 2020 it published its Climate Emergency Strategy. The Trust has a network of green champions, of which I am one, and as the Trust began to develop a strategy for embedding sustainability across the organisation, the green champions became more involved. My personal sustainability journey started a little earlier; I was already doing small things to help the planet at home, and had an interest in sustainability, and then in 2018, when I was a section leader in our sample reception area, the number of specimen bags being used and discarded was troubling me. In order to try and address this I started a project to introduce reusable specimen transport boxes to reduce and potentially eradicate single use plastics used to transport specimens. I ran a small pilot and it was very successful. The Trust had established a climate emergency action fund by this point, and so I applied for funding, and was successful! This funding allowed us to roll out the project to all areas in the Trust. We are in the process of rolling it out to all our GP practices now too. I have since completed a sustainability course that our Trust runs which is IEMA certified (Institute of Environmental Management and Assessment) to become a Sustainability Ambassador. Since then, I have been the Blood Sciences Sustainability Lead, and now work with the rest of the directorate

sustainability team to promote sustainability and work together on sustainability projects.

How is lab sustainability managed and what is your lab networks' approach to laboratory sustainability?

As a Sustainability Ambassador I was made aware of the Trusts model for sustainability which set out sustainability aims for the directorates in the Trust. These include having: a directorate specific sustainability statement; a named individual responsible for sustainability; and a sustainability working group that meets regularly to take forward improvements. The group identifies and records areas for improving the directorate's sustainability impacts, creates action plans and monitors progress and reports and shares successes to inspire others.

My Department (Blood Sciences) sits within Integrated Laboratory Medicine along with Microbiology/Virology, Genetics, Cellular Pathology and the Innovations Hub.
As individual departments we were already conducting sustainability projects in our own areas, but we came together as a directorate group. Our directorate manager became the named individual responsible for sustainability within the directorate and we set up monthly sustainability meetings, inviting the green champions to come together from across the directorate. Together we developed a directorate sustainability statement and started a project log. We have a combined log for projects that we are working on across all departments and then an individual log for projects that are department specific.
We meet regularly within our own departments to drive our own projects forward and then monthly as a directorate group to share learning and ensure joint project actions are completed. We also held sustainability launch events across the three different hospitals to share our progress and learning with the rest of our teams. We have also completed the bronze award for the Laboratory Efficiency Assessment Framework (LEAF), which are standards set by UCL, and are currently working towards the silver award.

Joanne Hall presenting at the recent sustainability launch event

What advice can you give other labs on how to start, and how to engage people?

I think the main advice would be to start small, bring together the people in the lab who already have an interest in sustainability and meet regularly to share ideas, put together an action log and celebrate the improvements you make as a group. At our launch events we explained what the climate emergency was and the impact that our laboratory work has on the environment. We then went on to demonstrate projects that we had conducted and the environmental benefits they had. Following the launch events we had more people in the directorate sign up to be green champions and our group continues to grow. It is hard to find the time for extra work and projects around your regular day job, so it is important to keep the meetings short, but to meet regularly and to keep sharing the progress you are making. I think it also good to reach out to your Trust's sustainability team, most Trusts have one now, they can support with advice and connect you up with others to move projects forward and share ideas.

What were your early 'quick wins' that might inspire others to get started?

A lot of our early wins were around reducing waste. One of our green champions introduced a process for automatically turning PCs off after periods without use, we also reviewed other equipment that could be turned off out of hours. We have moved to electronic HR processes across the directorate and introduced electronic PDP files for staff. We have also introduced electronic processes for referral work and reduced the number of reports being printed where possible. We also take part in manufacturer recycle schemes and have also reviewed our fridges and freezers to ensure we are not under using them, consolidating contents where possible to reduce the numbers in use. LEAF, or one of the other sustainability frameworks that are available, can give a good starting point if you are unsure where to begin.

Have any of your projects been particularly challenging?

The transport box project was quite challenging as it required financial input and a lot of communication and engagement with all clinical areas, as well as with infection control. The logistics of introducing them to our GP practices has been particularly complicated as there are a large number of GPs across a wide geographical area, and we have had to work closely with the courier company and the Trust transport team. Also, some of the ideas we came up with as a group have not been able to be taken forward due to waste management or governance reasons and so you then have to explore other options.

As a lab network that has been engaged in sustainability activities for a long time now, what are the changes you are most proud of, or that you think have had the biggest impact?

As a lab network, the production and implementation of the pathology's sustainability strategy has been key and is pioneering both within the Trust and outside of it. It demonstrates a real buy in at all levels of staff, everybody has a voice at the table and any idea can be considered.

This, and holding our launch events, has probably had the biggest impact, as they have helped to implement and move our projects forward and embed sustainability into our everyday laboratory activities. We now consider sustainability whenever we are looking for new equipment, we re-use or re-purpose where possible and we look at our processes to eliminate waste. Sustainability is now discussed and considered at many of our departmental meetings. But in terms of individual projects, the specimen transport box project and the program to shut down PCs, which is possibly being rolled out

across the Trust, have had the biggest impact.

What projects are you currently working on?

Projects that we are currently working on include: an adapter to fit into the specimen transport boxes for universals, rolling out more engagement events across the directorate, working towards the LEAF silver award, recycling external quality control packaging, recycling ice packs, engaging with suppliers to reduce excessive packaging, using rechargeable batteries and using washable visitors lab coats rather than disposable ones.

You mentioned that you have achieved bronze certification with LEAF and are now working towards silver. What advantages do you think come with joining a certification programme like LEAF, or the EFLM and MyGreenLab schemes?

They are a good place to start if you are not sure where to begin, and a lot of them are quick wins, which boosts confidence and engagement. It is also keeping an eye to the future where sustainability accreditation may become a requirement of UKAS or MHRA for example.

Have you managed to tap into any additional funding sources to support any of their green initiatives, or have any suggestions on this?

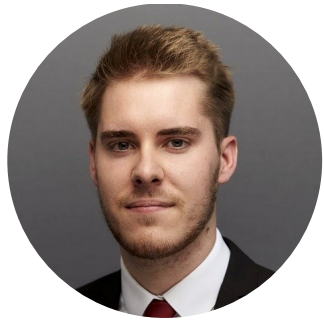
I utilised our Trust's climate emergency action fund, which provides small amounts of money to get sustainability projects off the ground, which is quite often one of the main barriers. We have not accessed any other funding sources yet, but I know there are more funding sources for green initiatives being offered externally.

A huge thank you to Joanne for taking the time to answer our questions. We in the Green Champions Team hope that you have found Joanne's answers inspiring, and if you want to find out more, we encourage you to either contact us directly, or head over to the Green Champions space on the Association for Laboratory Medicine website for links.

Laura Middlemass from the Trust sustainability team

Michelle McCluskey from Roche Diagnostics also presented at the recent sustainability launch event

ASSOCIATION FOR LABORATORY MEDICINE NICE GUIDELINE SUMMARIES



DANIEL CASEY
STP (Biochemistry), Nottingham University Hospitals NHS Trust

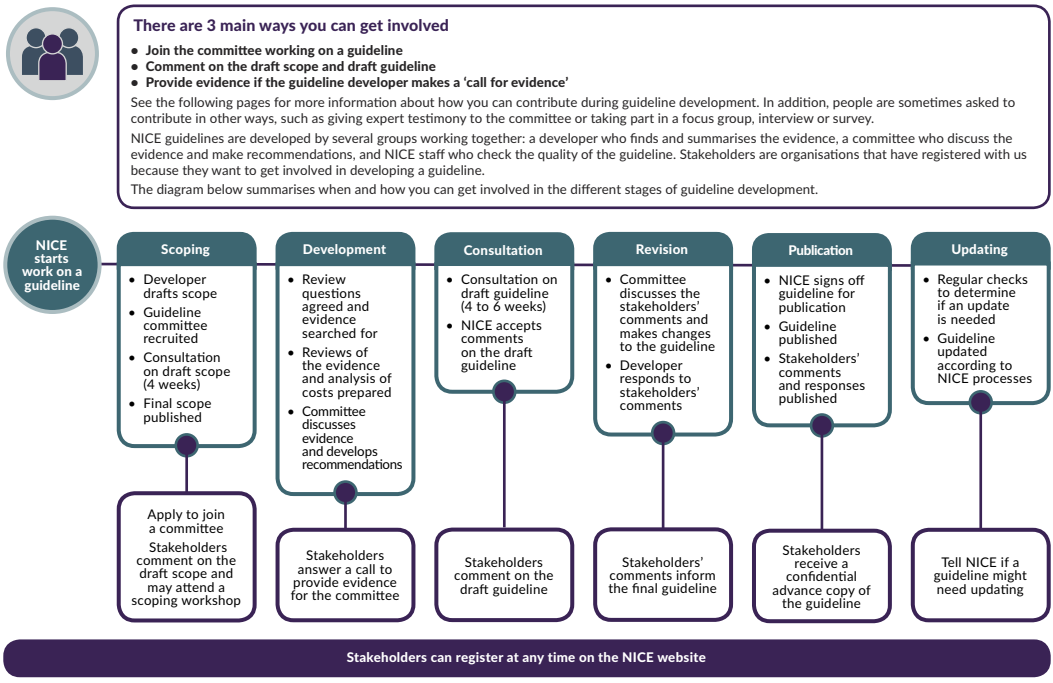
Association for Laboratory Medicine Scientific Committee and NICE

The Association for Laboratory Medicine Scientific Committee works closely with the National Institute for Health and Care Excellence (NICE) to ensure professional views are encompassed in the division and updates of clinical practice guidelines - particularly where these affect laboratory services. Experts are put forward by the Scientific Committee based on their subject knowledge. The level of involvement is variable but may be extensive and include full membership of the Guideline Development Group. NICE guidelines themselves are reviewed, evidence-based recommendations that provide healthcare professionals with standards for high-quality patient-centric care. Such guidelines often have an impact on the selection, availability and testing frequency of laboratory tests based on both efficacy and economic assessment.

Purpose of the Association guideline summaries

The Association for Laboratory Medicine NICE guideline summaries are developed by the Trainee Committee and provide an invaluable resource freely available on the website to both Association members and more widely to the public. Each guideline summary provides a concise document with key information relevant to laboratory clinicians and scientists. These guideline summaries play an important role in ensuring key recommendations are reviewed and locally addressed. Each guideline summary is condensed into just 250 words.

The impact of the summary is then reiterated with specific points that may require consideration in laboratory services, often relating to assay availability, the volume of requests and turnaround times. This enables readers to easily consider the potential impact in their own departments. An impact assessment is also represented using a traffic light system, with green indicating no impact, amber indicating relevance and red indicating



Flow chart of how nice guidelines are developed. Visit this website to read more.

direct impact on laboratory services. Trainee representatives have in the last 12 months encouraged individuals within their region to volunteer to draft guideline summaries to ensure that the current publications remain up to date.

Submission requirements

Trainees are required to have a local supervisor (with FRCPath) within their own department: the named supervisor is responsible for reviewing the trainee's summary against the respective NICE recommendations for its scientific and clinical content before submission to the Association. The supervisor must also agree with the potential laboratory impacts.
A template and writing guidance are provided by the Association. It is expected that the trainee would produce a first draft for their supervisor within four weeks of assignment. Their departmental supervisor then has 2-3 weeks to review their work before submission to the Association, after which the summary is submitted for a clerical check and published on the website.

Professional practice benefits

Continuous Professional Development (CPD) points and a certificate are provided to all individuals who participate.
The certificate is accompanied with a letter from the Association which makes for excellent CPD/ training evidence.
This therefore provides an excellent opportunity for STP and HSST Trainees to address their respective training competencies.

Personal experience

I sought this opportunity given my interest in scientific communication and thought it would be a good activity to facilitate my learning in addition to supporting the Association for Laboratory Medicine Trainees Committee. Before volunteering I

communicated with the Consultant Clinical Scientists in my department who were happy to supervise and encouraged involvement.

After contacting the Association for Laboratory Medicine coordinator, I was assigned NG28 Type 2 diabetes in adults: management. This guideline supersedes CG66 (published in May 2008) and CG87 (published in May 2009). This was particularly interesting and relevant to my training, the review of this guideline also coincided with my endocrinology MSc module. This provided me with the opportunity to consolidate teaching with clinical guidelines and consider the impact of such changes on day-to-day practice.

I then reviewed this guideline in detail and extracted aspects/recommendations that were implicated in clinical biochemistry services. I also noted that the diagnostic aspects of diabetes mellitus type 2 (T2DM) were excluded from the most up-to-date guidelines, as these are now included in the NICE Clinical Knowledge Summaries (CKS).

The newest revision of this guideline suggests measurement of HbA1c at 3-6 monthly intervals, having individualised treatment targets for some patient groups and working with clinical teams in instances where there are discrepancies between plasma glucose and HbA1c results.

The requirement for assessing the impact on laboratory services allowed me to consider the operational aspects of guideline changes.

From conducting this activity, I have familiarised myself with the steps involved in the creation of both the NICE guidelines themselves and the Association for Laboratory Medicine trainee summaries. This has also prompted wider reading around these guidelines, consolidated my learning and initiated an interest in diabetes.

Additionally, this prompted a learning opportunity after an active discussion with my Consultant supervisor concerning the importance of biochemistry in monitoring and follow-up of patients with T2DM.

The letter of participation and certificate have provided good evidence for my STP professional practice module and has allowed me to further develop my interest in scientific communication.

As a result of writing this summary, I am now more aware of current best practice and more specifically treatment targets for T2DM monitoring. This has particular significance during laboratory authorisation of results and will undoubtedly benefit my future role as a Duty Biochemist. I would recommend all Trainees get involved.
I personally have found this opportunity very valuable and will continue to seek opportunities to support the Association for Laboratory Medicine Trainees Committee.

Getting involved

Trainees looking to get involved should email guidelines-summaries@labmed.org.uk
Prior agreement from a departmental supervisor is required and their details will be a prerequisite to guideline assignment.

Further details are available on the Association for Laboratory Medicine's website.

MEETING REPORT

SCOTLAND REGIONAL SCIENTIFIC MEETING

GEORGIE CONRICH-WILKS

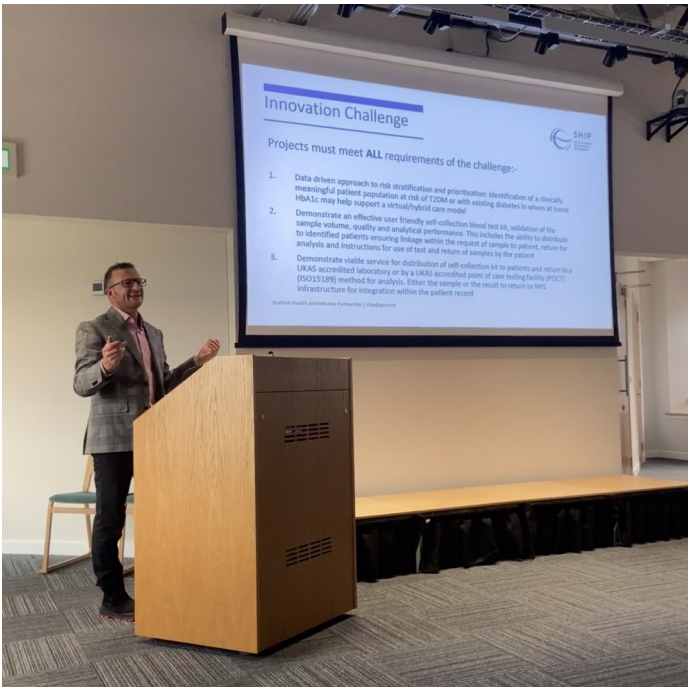
STP Trainee, NHS Greater Glasgow & Clyde

On 21 November 2023, over 50 delegates from around Scotland travelled to The Barracks Conference Centre in Stirling for the Scotland Regional Scientific Meeting. The engaging talks included a morning session focusing on management topics, encompassing current opportunities and future challenges affecting blood sciences, whilst the afternoon session explored transgender services within laboratory medicine. The morning chair, Sophie Hepburn (Consultant Biochemist, NHS Highland), opened the session by welcoming delegates and sponsors to the meeting and introducing the first speaker of the day, Dr Karen Mitchell.

Morning session: Management

Dr Mitchell (Consultant Chemical Pathologist, NHS Grampian) introduced us to the enormity of the project underway to develop a national laboratory information management service (LIMS) in Scotland. Set to link all pathology disciplines except transfusion in 93 laboratories across 29 locations, the network would be the largest of its kind. As well as making data easier to access across Health Boards, Dr Mitchell suggested that a national LIMS would encourage standardisation of testing practices, optimisation of workflows and harmonisation of outputs, whilst retaining the ability to implement local procedures depending on local requirements. However, she also noted the challenges with complete standardisation when such stark differences in how LIMS is utilised exist between disciplines and laboratories. Dr Mitchell highlighted the importance of representation from laboratories across the country during the development and implementation process and encouraged delegates to get involved wherever they can, particularly in identifying any local processes that may be impacted by the introduction of the national LIMS.

Dr Sara Jenks (Consultant Chemical Pathologist, NHS Lothian) and Dr Ian Godber (Consultant Biochemist, NHS GG&C) were up next to discuss the opportunities and challenges associated with capillary testing. Dr Jenks started the talk discussing the potential benefits of



Dr Ian Godber presented on the opportunities and challenges assocated with capilary testing

capillary testing, with a reduction in painful venous collection and waitlists for phlebotomy appointments proposed to improve compliance in chronic disease monitoring and the ability to titrate treatment. She also highlighted some of the potential challenges, such as smaller and poorer quality sampling, stability issues, lack of compatibility with automation and studies needed to discern comparability with venous sampling. Whilst sample quality, stability and haemolysis were all noted to be important considerations, Dr Jenks noted several studies in which capillary samples of certain analytes such as HbA1c were found to be clinically and analytically acceptable, whilst also more appealing to the patient. In fact, Ian Godber followed this up with an overview of the ongoing Small Business Research Initiative (SBRI) Diabetes open innovation challenge in which businesses were invited to develop a remote HbA1c self-testing kit. In order to obtain a Scottish Health Industry Partnership (SHIP) funded contract, the successful kit would need to be easy to use, returnable to a UKAS accredited laboratory, and the result must be able to integrate into the patient record. The contract award winners are set to be announced in early December.

Dr Bernie Croal (Consultant Chemical Pathologist, NHS Grampian) closed the session with a talk on the rise of direct-to-consumer testing (DTCT) and the potential dangers to patients from a lack of regulation. Poor analytical performance, inappropriate test selection and lack of follow up were all noted to negatively impact DTCT user wellbeing, and the push to purchase unregulated medication in response to their results a serious risk to DTCT users' health. Delegates were encouraged to engage with government, regulators and task forces aimed at educating and protecting the public from poor quality testing.

Afternoon session: Transgender services and Laboratory Medicine

After a tasty lunch and catch-up with colleagues, Dr Christopher Pitt (Principal Biochemist, NHS Ayrshire and Arran)

opened the afternoon session by introducing Dr Susan McGeoch (Consultant Physician, NHS Grampian) to speak on gender identity in endocrinology.

Dr McGeoch began with an overview of the important terminology in gender identify before launching into the role of endocrinology in gender affirming treatment. She educated us on the types of feminising and masculinising hormonal treatment delivered in her clinic, but also the many other roles she has in transgender patient care, such as completing treatment risk assessments, setting treatment goals and directing other health screening that may be required once treatment has commenced. Dr McGeoch also introduced some of the challenges of caring for a transgender patient in an NHS still lacking the knowledge and infrastructure to treat non-cisgender patients.

In the second talk of the afternoon, a joint talk by Sophie Hepburn (NHS Highland) and Tamsin Glenwright (NHS East Suffolk and North Essex NHS Foundation Trust) elaborated on these challenges, using a recent report on current laboratory practices when handling transgender patient data and test requests to illustrate its impact on patient care. In particular, it was noted that many current LIMS do not have the ability to differentiate between gender identity and sex assigned at birth, which is essential in the interpretation of analytes with gender-specific reference ranges. Ms Hepburn also highlighted other IT failures that may negatively impact care in transgender patients, such as an inability to link patient records before and after transitioning, missing reference ranges when sex is not recorded and test ordering blocks of analytes deemed gender-specific such as prostate specific antigen (PSA). Ms Glenwright presented an interesting case in which a renal transplant was delayed due to the limitations of eGFR within transgender patients. However, the speakers highlighted the amazing work currently underway in the TransRIHTS study to develop reference ranges for transgender and non-binary people on hormonal treatment to improve clinical outcomes in these patient groups.

The afternoon session was wrapped up with a brief overview of a recent audit of PSA practice across Scotland, this audit was conducted by Dr Harriet Hale and presented by Dr Helen Wise (Clinical Biochemist, NHS Lothian). Key recommendations made in the report predominantly required changes to IT processes. For example, as was discussed within the previous talk, blocks for ordering PSA in women should be removed to ensure access to appropriate health screening in transgender women. Furthermore, it was suggested that clinicians be prompted to state whether a patient has had a radical prostatectomy or is on finasteride when ordering a PSA. The introduction of PSA velocity, a calculation not used widely in Scotland but recommended in NICE guidelines, was also discussed as a way to improve identification of prostate cancer negative on imaging.

To conclude an incredibly thought-provoking day, Christopher Pitt thanked our wonderful speakers and the event organisers for their efforts and wished everyone a safe journey home. Events such as these remind us of how lucky we are to be a part of such an unbelievable community of healthcare scientists and professionals working across Scotland. I look forward to many more similar events yet to come.

MEETING REPORT

NATIONAL AUDIT DAY MEETING

HANNAH FEARON

North West Regional Audit Representative

On 10 November 2023 around 100 Clinical Scientists and medics met at the new Royal College of Pathologists function rooms in East London. Dr Wassif, the National Audit Lead, opened the meeting by welcoming everyone to the meeting. The first presentation of the day was from Nick Mills, Chair of Cardiology and Consultant Cardiologist at the Royal Infirmary of Edinburgh, who spoke on 'Accelerated diagnostic pathways for acute chest pain: guidelines into practice', outlining the use of troponin as a tool in the diagnosis of acute coronary syndrome (ACS). He described how chest pain accounts for around 5% of AED visits in the UK and high sensitivity troponin (hsTn) assays can be incredibly effective at stratifying risk and preventing unnecessary and expensive imaging, especially when used with single sample rule out pathways. Professor Mills highlighted the 2023 ESC Guidelines for management of acute coronary syndromes recommending 0/1 h and 0/2 h patient pathways and described how their research showed decreased length of stay and hospital admissions with no increase in adverse cardiac events (ACE). He presented new HDRUK (Health Data Research UK) research that was collected from linked hospital, GP and EPR data records across the UK which confirm that troponin is excellent as a rule out test with only 0.1% of low risk groups experiencing any adverse cardiac events by 30 days post discharge. The results also showed that there was consistent care by gender and geographical site – but black and minority ethnic (BAME) individuals with high troponin were less likely to be admitted for further investigations.

Professor Mills discussed new scoring tools that combine clinical and laboratory data such as the MI3 score which uses troponin, age, sex and rate of change, and the Collaboration for the Diagnostic Evaluation of ACS (CoDE-ACS) study which reviewed 10,000 patients and had improved rule out outcomes based on troponin results and the time of symptoms onset. In summary he concluded that hsTn is now widely adopted, and there are consistent recommendations to use accelerated diagnostic pathways with data showing that single measurement rule out pathways can prevent unnecessary admissions. New combined pathways will improve efficiencies in the system and hopefully decrease inequalities in healthcare provision and outcomes.

Louise Ward, Jane Williams and Wassif

The results of the 2022 national audit on troponin were then presented by Helen Jerina, Principal Clinical Scientist at Gloucester Hospitals Foundation Trust. This audit aimed to establish how labs are measuring troponin (what methods are in use, what locations are requesting the test), the interpretation of results and alert limits, and the use of ACS pathways and guidelines. There were 63 responses included in the results, and these showed that 100% of responding labs are now using high sensitivity assays (up from 70% in the 2018 audit), with Roche being the largest provider.

For those using a single sample rule in protocol (which was the majority of labs), around 35% were now following ESC guidelines, but there was a lot of heterogeneity in other protocols. For those using single sample rule out (ideal) there was a shift from the majority using 99th centile rule out in 2018 to using a 'low limit' rule out this audit cycle. 88% of labs use delta changes in their decision making, most using absolute value changes, but some using percentage changes in troponin values. Clear progress in shortening clinical pathways has been made since the audit was first undertaken in 2014 when the mode time for second sample collection was 6 h. In the 2018 audit this was 3 h, and in 2022 3 h was still the mode, but there was a shift to more locations using 1 h or 2 h second sample collection times. Turnaround times (TAT) are still an issue when providing a shorter clinical pathway using troponin as 90% of respondents had a 1 h TAT target, with only 30% actually able to consistently achieve that target. Ninety percent of labs were however consistently able to turn results around within 2 h.

Paul Collinson, Consultant Chemical Pathologist and Professor of Cardiovascular biomarkers at St Georges Medical School, then gave a talk on 'Accelerated diagnostic pathways for acute chest pain: what does the laboratory need to do (and what the guidelines don't tell you)'. Professor Collinson discussed current cardiac biomarker practice in Europe, the theory of rapid diagnostic algorithms and the practical requirements for implementing these pathways. He outlined the most recent results of the CARMARGUE audits (The CArdiac Marker Guideline Uptake in Europe) which showed that cardiac troponin is by far the dominant biomarker in use with 60% of labs audited now using single sample rule out pathways in 2022 (up from 20% in 2019). He highlighted imprecision targets at different troponin values and showed audit data suggesting that current assays are meeting the imprecision goals for serial sampling based on IQC data. Professor Collinson reminded the audience that rapid diagnostic algorithms are predictive rather than diagnostic and turnaround time is usually the limiting factor in choosing serial sampling times. He suggested that the future will include an increase in point-of-

care testing and restructured decision pathways, highlighting the importance of ensuring that new pathways are based on proactive discussion with clinical colleagues and monitoring.

Two local audits were selected for presentation prior to the meeting by the members of the national audit committee. Katie Hadfield of Airedale NHS FT presented on the results of a local audit based on the NICE guideline CG122 'Ovarian cancer: recognition and initial management'. This audit was initiated due to 2017 audit data that showed that 8% of patients diagnosed with ovarian cancer between 2013-2015 had CA125 of 20.1 to 34.9 kU/L measured in primary care prior to diagnosis, which is below the NICE recommended threshold for clinical action. The audit therefore had the aim of assessing the clinical impact of adding a clinical comment to all CA125 results of between 20.1-34.9 kU/L suggesting a repeat CA125 measurement should be performed if relevant symptoms persist. Audit methods included the review of 884 patients with at least one CA125 result greater than 20 kU/L. Results showed that if the aforementioned comment was added then the median time to repeat was 41 days, if no comment was added then it was 111 days, but that there was no difference in clinical outcomes for the population studied. James Pethick of Black Country Pathology Services then presented the results of his local audit on primary hypothyroidism; 'Diagnosis and monitoring of primary hypothyroidism: a laboratory perspective of primary care' based on the NICE and British Thyroid Association guidance. All primary care thyroid hormone requests between September 2020 and September 2023 were reviewed with results on over 130,000 samples from 50 requesting locations in Wolverhampton. Results showed that many patients took more than one follow up test in order for their TSH to come into the normal range and that there was variation in follow up procedures.

Angela Woods and Peter West

During a break for lunch, delegates were able to view a selection of interesting audit posters and to vote for the best of these. The prizes for best posters went to Devon Buchanan of Synnovis for their poster on 'Current practice and recommendations for managing transgender patient data in clinical laboratories in the United Kingdom and Republic of Ireland' and to Katie Hadfield of Airedale NHS FT for her presented audit.

Louise Ward, Deputy Chair of the National Audit Committee, opened the afternoon session of the meeting. The first speaker was Dr Ross Sadler of the Myeloma UK Lab Best Practice Committee, a body that was set up to bring together professionals across the disciplines of Immunology, Clinical Biochemistry, Haematology and related organisations such as EQA providers. Ross presented a baseline international audit conducted to assess compliance with use of a tool produced by Myeloma UK in 2023 following an audit of existing practice in 2017 that revealed disparity in laboratory myeloma service delivery. Overall, there were 133 responses with 85 centres from the UK and Ireland

Hannah Fearon and Wassif

responding to a request for data, with median compliance to the tool assessed to be 71%. This overall compliance was considered to be good but with room for improvement as ideally compliance would be 100% across all centres. Further work is planned with a re-audit in 1-2 years, and work to examine how to achieve the biggest gains in specific criteria across certain practices (MRI, reflex criteria and significant monoclonal criteria).

Dr Fenella Willis, Consultant Haematologist, St George's Hospital, London, then gave an insightful talk on 'Assessment of and management of patients with monoclonal gammopathies'. She informed us that monoclonal gammopathy of unknown significance (MGUS) is present in 3.2% of those over fifty years of age, for whom there is around 1% chance of development to myeloma/ lymphoproliferative disorder per year. The comprehensive IStopMM study undertaken in the Icelandic population found a 5% prevalence of MGUS in those over 50 years (screening was offered to all of those in the population who are over 40 years – which amounts to 51% of the total national population). Fennela stressed the importance therefore of picking up patients before they progress to myeloma (of which there are 5,800 diagnosed in the UK per year). Three reasons that precursor conditions such as MGUS matter include: firstly, the impact of delay in diagnosis of myeloma; secondly, the development of associated medical conditions linked to MGUS; and thirdly that monitoring of MGUS allows early detection of progression. Average time from presentation to diagnosis of myeloma is 163 days – one of the longest delays in diagnosis of all cancer patients. She also outlined Swedish and SEER-Medicare studies showing that earlier detection of monoclonal gammopathy was associated with fewer complications at diagnosis and a longer survival. Some of the recent work aiming to address this issue of delay include the TEAMM trial (Tackling Early Morbidity and Mortality in Myeloma), the May 2023 British Journal of Haematology guidelines for the 'Investigation and management of the monoclonal gammopathy of undetermined significance', and the GP Myeloma Diagnostic Tool which issues simple guidance to GPs. In closing she emphasised that laboratories are central to the diagnostic pathway, improve the patient journey and reduce diagnostic delay.

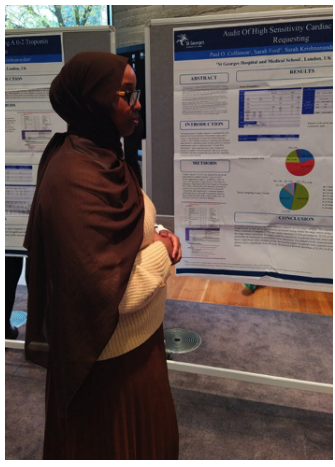
The third myeloma presentation of the day was from Dr Hans Jacobs, Consultant Immunologist in The Netherlands, on 'Monitoring minimal residual disease in blood using targeted mass spectrometry'. He spoke of EQA result submission in the Netherlands that revealed disparity between reporting of M-protein results on electrophoresis by 70 labs in The Netherlands EQA scheme. Between-lab imprecision was high, and generally within-lab imprecision was better, although not for all labs, with quantitative differences between methods in spiked samples. This, Hans explained, highlights the difficulty of quantifying M-protein when there is a polyclonal background and is thus

a barrier to minimal residual disease detection in multiple myeloma patients. While 70% of patients achieve serological remission (sub-clinical remission, SCR), minimal residual disease (MRD) monitoring allows clinicians to be informed beyond SCR, is the best multiple myeloma prognostic marker, allows MRD guided therapy and is usually used as the primary endpoint of treatment in clinical trials. Hans spoke of how MS-MRD analysis is feasible in 100% of multiple myeloma patients, allows personalised diagnostics, is patient friendly (minimises repeated bone marrow aspirates), allows dynamic monitoring, can be complementary to MRD and can be possibly first line if repeated sampling is required.

The final presentation of the day was from Dr Mairi Whiston of Myeloma UK, the only UK organisation dealing exclusively with myeloma and associated conditions, and who provides a range of information and support services for patients, family, friends and carers. Myeloma UK produces healthcare professional resources to encourage GP engagement with diagnostic tools and has produced e-learning modules for BMJ education and the NHS learning hub. Mairi introduced an engaging recorded presentation from patient Mark Scott who shared the story of his myeloma diagnosis journey and the impact which the delay in diagnosis has had on his mental and physical health. Mairi then reflected on the 'A life worth living' report which surveyed 1,324 participants with myeloma, 50% of whom reported a delayed myeloma diagnosis. Only 4% of respondents were from BAME communities which limits the drawing of any strong conclusions but it was suggested that individuals from these backgrounds are more likely to have more physical effects from myeloma and decreased quality of life. She pointed out that it costs in excess of £19,000 more to diagnose myeloma in urgent/emergency care when the disease has progressed than in GP surgeries during initial and routine consultations.

That brought the company present to the end of a brilliant day. After so many insightful and clinically useful presentations and discussions regarding troponin and myeloma, as well as all of the submitted posters and keen discussion, Dr Wassif ended the meeting and expressed his gratitude to the Association Office and thanked all attendees, presenters, everyone who completed the national audits, Dina Patel from Immunology UK NEQAS and the organisers, namely Tamsin Lawson, Tracy Davis, Mike Lester, Christine Hall-Shelton and Cheryl Taylor who made this meeting such a success.

Delegates reviewing posters



OBITUARY

VINCENT MARKS

10 JUNE 1930 - 6 NOVEMBER 2023

Professor Vincent Marks died peacefully at the age of 93 at his home in South London on 6 November 2023. *The Times* described him as a 'world expert on insulin'. His academic publications and media performances reached an international audience. Within our profession he was recognised as an enthusiastic, engaging teacher and researcher. For those of us privileged to know him personally, he was an energetic, inspiring friend, mentor and colleague.

Vincent Marks was born on 10 June 1930 in the Grand Junction Arms in Harlesden, North London. His sister Sheila was a schoolteacher and his elder brother John, recently deceased, was a GP and Chair of the BMA for the unprecedented period of six years.

During the Second World War, Vincent was evacuated to a farm in Devon. Returning to London in 1942, he was awarded a scholarship to a secondary school in Tottenham, followed in 1948 by a further scholarship to read Medicine at Brasenose College, Oxford.

In 1954 Vincent qualified as a doctor after clinical training at St Thomas' Hospital London. In 1955, he married Averil Sherrard, a talented artist and sculptor, who survives him with their children, Lewis and Alexandra (both lawyers), six grandchildren and four great-grandchildren.

Having initially considered Psychiatry, Vincent settled for a Senior House Officer post in Clinical Pathology at St George's Hospital, followed by posts in various London hospitals over the next 10 years.

While a Chemical Pathology Registrar in the Institute of Neurology and Neurosurgery, Queen Square, Vincent developed an interest in Clinical Laboratory and Metabolic Medicine and particularly in hypoglycaemia.

As an MRC Research Fellow at King's College London, under Professor Charles Gray and with help from John Anderson and David Pyke, he published on the relationship between Krebs cycle intermediaries and insulin.

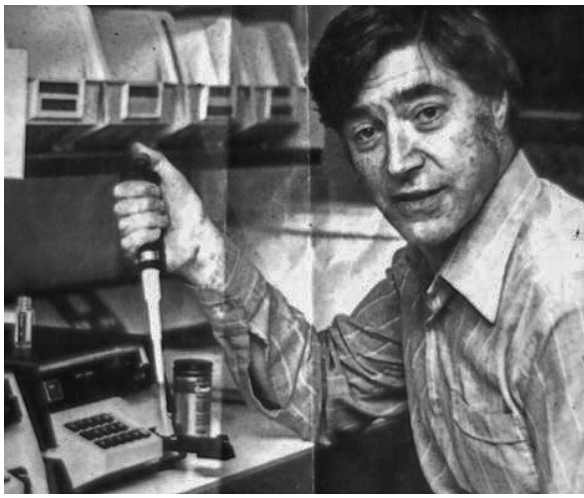
In 1959 Vincent Marks authored a publication describing the analysis of glucose using glucose oxidase with ortho toluidine as the chromogen, a development which is the essence of the glucose testing sticks that have been so widely used. As a mark of its significance, this paper was republished in the 40th anniversary of *Clinica Chimica Acta*.

This seminal 1959 publication was followed in 1961 by a publication describing the application of the method to the 'innovative' autoanalyser.

In 1962, Vincent Marks was appointed to a new post of Consultant Chemical Pathologist at Epsom District and West Park Hospitals. His department served an acute hospital and 11 Mental Health hospitals and he led the establishment of a new biochemistry laboratory. He became interested in postgraduate education and lunchtime clinical pathology meetings became 'standing room only'. He continued to collaborate with the team at the Royal Free Hospital, most notably the South African researcher, Ellis Samols, in the application of recently-introduced radioimmunoassays to study the metabolism of insulin in particular. Together they described the stimulation of insulin secretion by glucagon in 1966. This was counterintuitive at the time and important early evidence for the paracrine and endocrine control of insulin secretion, expanded many years later by the development of assays for both GIP and GLP-1.

In 1964 he was the author, with Clifford Rose, of the first edition of *Hypoglycaemia*; the second edition had to wait until 1980! In an article marking the Association for Laboratory Medicine's 70th anniversary, Vincent highlighted three major innovations of the 1960s: automation, radioimmunoassay and the distinction of 'Chemical Pathology/Clinical Biochemistry' as a discipline in Pathology.

In the 1950s/60s, the evolution of Chemical Pathology/ Clinical Biochemistry as a distinct discipline in pathology highlighted the need for specialist training for both medics and scientists. This triggered the development, by Dr Eric Reid, of an MSc course in Clinical Biochemistry in 1968/9 initially in Battersea, moving to Guildford in September 1970. This coincided with the appointment of Vincent as Chemical



Pathologist in the Guildford hospitals and as Foundation Professor of Clinical Biochemistry in the newly established University of Surrey. Under his leadership the MSc course flourished for 35 years, training many of the country's leading Chemical Pathologists and Clinical Biochemists.

Under Vincent's initiative and leadership, the government-funded Supra-regional Assay Services were developed at the University of Surrey and the Guildford Hospitals for trace elements, small molecules such as drugs and for peptide hormones. These were led by Drs Andrew Taylor, Derrick Teale and more recently Gwen Wark and evolved into national and international analytical and clinical services. Vincent encouraged the adoption of therapeutic drug monitoring and embraced technologies which included the concept of 'bed-side biochemistry' which evolved into the now ubiquitous 'Point-of-Care Testing'.

In 1985, as an expert witness in the US, Vincent famously helped challenge the conviction of Claus von Bulow for killing his wife by insulin injection, and later in the UK, his experience contributed to the conviction in 1993 of Beverly Allitt for the murders of four children, two by insulin injection.

His interest in both hypoglycaemia and the metabolic effects of alcohol led to the

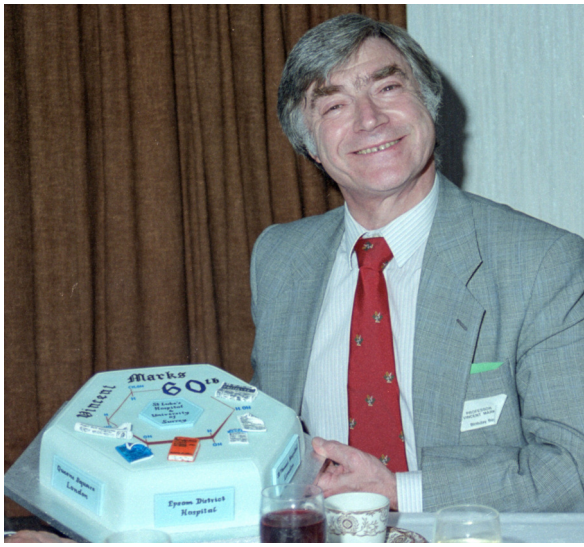
publication in 1977 of the much-discussed *Lancet* paper 'Lunchtime gin and tonic: a cause of reactive hypoglycaemia'. The later addition of assays for insulin-like growth factor-I (IGF-I) and IGF-II further added to the repertoire of tests useful in the diagnosis of hypoglycaemia. He supported the work of Professor Josephine Arendt in the development and application of melatonin assays. Vincent retired from his academic and NHS posts in 1995 but maintained his research interests as Emeritus Professor into his 90s.

Vincent Marks contributed to many organisations. The Association of Clinical Biochemists (ACB) was established in 1952 with Vincent joining in 1958. He subsequently held a variety of posts in the Association as Secretary of the South East and West Regions in 1966-67, Chair of the Publications Committee in 1974-77, Editor of the *Annals of Clinical Biochemistry* 1981-85 and finally Association President in 1989-90. He served as Dean of the Faculty of Science at the University of Surrey and Vice President of the Royal College of Pathologists.

Vincent had a characteristic presentation style which drew an attentive audience whether at local meetings, to MSc students or at national and international conferences. He will be remembered by his many colleagues and students for his enthusiasm, endless energy and … distinctive booming voice! There was no topic on which Vincent didn't have an emphatic and generally informed opinion! He was good company and a considerate friend.

Vincent Marks was a family man with talented children and grandchildren. In an interview for *The Endocrinologist* he is quoted to have said, *'I belong to the school that believes life is not a rehearsal but is the real thing. I've always felt it is important to have a good life, as well as my career.'* The interviewer was left wondering who is going to replace the great characters of endocrinology but concluded in Vincent Marks' case, *'I don't think we should try, as this man is almost certainly a one-off'.*

Stephen Halloran, Peter Goddard, John Wright and Janet Smith



OBITUARY

EMMA LEWIS

22 NOVEMBER 1967 – 14 NOVEMBER 2023

It is with great sadness that we report the death of our colleague, Emma Lewis, Consultant Clinical Scientist at the Countess of Chester Hospital NHS Foundation Trust.

Emma was born and raised in the Southwest of England, and remained there for her undergraduate education, studying Applied Biological Sciences at what was then Bristol Polytechnic, now the University of the West of England. In 1990, Emma made what proved to be a permanent move to the Northwest, when she started a PhD in Biochemistry at the University of Liverpool.

Emma began her career in Clinical Biochemistry in 1994 as a Trainee Clinical Biochemist at Hope (now Salford Royal) Hospital and completed her training with a MSc in Clinical Biochemistry from the University of Manchester. In 1998, she moved to Manchester Royal Infirmary for her first Grade B Clinical Biochemist post and, having achieved her DipRCPath in 2001, she then took up a Principal Biochemist post at the Walton Centre and Aintree Hospitals. Emma was awarded her MRCPath in 2006 and, two years later, was appointed as Consultant Clinical Biochemist at the Countess of Chester Hospital.

Throughout her career, Emma contributed enormously to the direction, strategy and functions of the Association and FCS at a time of great change. She sat on the Executive Committee as Director of Regulatory Affairs, having previously been a member of the Education Committee (2007-2019) and FCS Member on the Workforce Advisory Committee

(2008-2019). Within the FCS, she rose to Chair, having previously served as Secretary (2013-2018). Unusually, Emma continued her work as FCS Regional Representative for the Northwest, which she started in 2012. Emma was always approachable and generous with her time and used her knowledge and expertise to help numerous members with various industrial relations concerns over the years.

In her role as Consultant Clinical Scientist, Emma was dedicated, hard-working, knowledgeable and supportive to each and every colleague with whom she interacted. She was always one of the first to volunteer to take on extra work, which she would incorporate into her already busy timetable without complaint; this is illustrated by her

active participation in the N4 network, with involvement in several groups/subgroups. In all her work, Emma was always calm and methodical, diligent, patient and cheerful.

In early 2022, Emma was diagnosed with an aggressive form of breast cancer that had already spread to her lymph nodes. During that year, she underwent chemotherapy, surgery and radiotherapy, throughout which she was typically courageous, determined and composed. Emma completed her treatment in October 2022 and, entirely in character, almost immediately returned to full-time work. Emma was given the all-clear in April 2023, but unfortunately, in October 2023, having developed a persistent cough, was eventually admitted to hospital for treatment of pneumonia. Having been released pending further tests, Emma was subsequently readmitted with a quite rapid deterioration in her condition, leading to the conclusion that the underlying problem was that the cancer had spread to her lungs. Unfortunately, by that stage, she was too ill to be treated and Emma sadly passed away in hospital surrounded by her family.

Emma leaves behind her husband, Mike Davies; her children, Sophie and Adam; and her parents, Peter and Penny, as well as colleagues and friends at the Countess of Chester and Arrowe Park Hospitals and beyond. Emma was a pleasure to work with, a kind and supportive colleague at all times, and will be hugely missed by everyone.

Lynn Rowbottom and Shirley Bowles

THE CROSSWORD BY RUGOSA

Across

8 Cyclic kind of acid (8)

9 Publishes concerns (6)

10 Speechless about thanks for change (6)

11 Debates involved with current metabolic problems (8)

12 Opening window (8)

13 Endlessly dispenses concoction for infection (6)

14 Perhaps emulate Olympic MP (not Conservative) with cancer (8,7)

18 Compound movement to the median (6)

20 Foreign stimulants produce net gains (8)

23 Odour enveloping the harmful deposits (8)

24 Model pharmacists reject scrip for a common medical condition (6)

25 Appropriate direction for extension (6)

26 Change into nice drug product (8)

Down

1 Re-educate – eat less (6)

2 Source of light if mantle breaks (8)

3 Coming promotion opening (6)

4 Homeostatic system account biased about scales (4-4, 7)

5 Short life history attempt for analysis (8)

6 Lacking sensation, result of drug lapse (6)

7 Element in French muesli mixture (8)

15 Amalgam of silver pundit is revising (8)

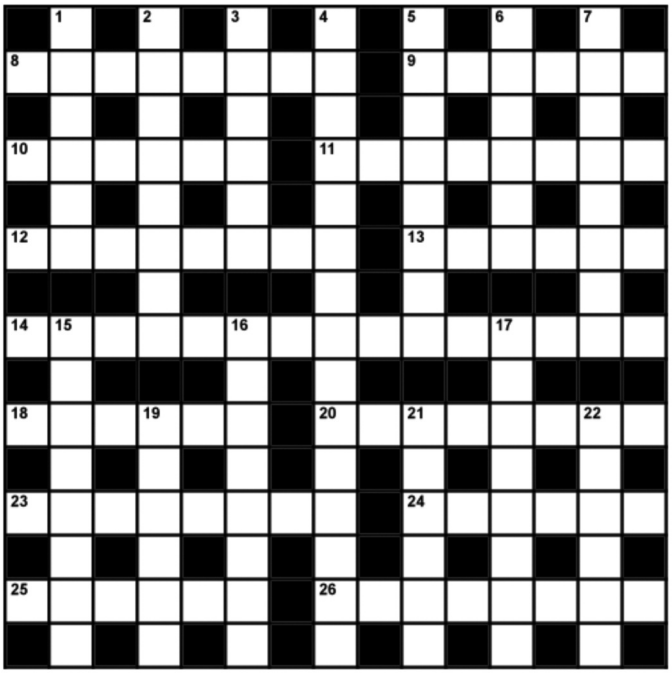
16 Phage not possibly an infectious agent? (8)

17 Illuminates exceptionally thin gels (8)

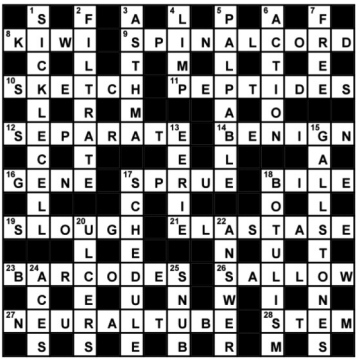
19 Odd rough (6)

21 Characteristics cunning stationers nose out (6)

22 Nominating appellative (6)



SOLUTION FOR DECEMBER'S CROSSWORD



Consultant Clinical Scientist/ Chemical Pathologist In Clinical Biochemistry

We are seeking a Consultant Clinical Scientist in Clinical Biochemistry or a Physician Chemical Pathologist to join a great team of individuals enjoying the work satisfaction and quality of life found in Qatar.

Sidra Medicine in Doha, Qatar, (sidra.org) is a state-of-the-art academic medical centre whose main clinical focus is the care of the country's children and women. It now has over 50 services including paediatric cardiac surgery, renal transplantation and treatment of metabolic diseases, meaning the Department of Pathology is continuing to expand the repertoire of testing it provides. In relation to Clinical Biochemistry, this includes specialist paediatric analyses using the latest technologies.

The primary responsibilities of the Clinical Scientist or Physician are the provision of the laboratory service, diagnostic testing, test interpretation, communication with medical staff, quality control/assurance; participation in the management of the Division, teaching and training at various levels as well as basic and applied research.

Informal discussions can be arranged by contacting Dr. Eric Kilpatrick (EKilpatrick1@sidra.org) or Unaib Javed (ujaved@sidra.org)

Requirements

Education:

- PhD for a Clinical Scientist. MD, MBBS or equivalent for physicians.
- Relevant Board Certification, or Fellowship of relevant College (FRCPath; FACMG; FCCMG; FFSc (FRCPA) in Clinical Biochemistry.

Experience:

- 8+ years' relevant experience in a clinical diagnostic laboratory as a Clinical Scientist **OR** 2+ years of post board-certification experience as a Physician.
- Demonstrable relevant knowledge and experience in laboratory practice.
- Experienced in the laboratory diagnosis of paediatric disease, with specific experience in the technical platforms used in a modern laboratory.

DEVELOP YOUR CAREER AND SUPPORT YOUR PROFESSION

We welcome applications for membership from health professionals and corporate bodies from the whole spectrum of laboratory medicine and healthcare science around the world. We are the representative voice for laboratory medicine and an established scientific authority.

Members have access to:

- A unified community platform to share best practice in laboratory medicine
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To find out more about the benefits and eligibility for membership please contact Mike Lester: mike@labmed.org.uk or +44(0)20 4542 6044

Association for Laboratory Medicine

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