ACB News

The Association for Clinical Biochemistry & Laboratory Medicine | Issue 666 | August 2020

In this issue

Find out more at www.faecal-immunochmical-test.co.uk

Faecal Immunochemical Testing with the HM-JACKarc

Supporting the Changes in Laboratory Workflow

Now, more than ever, it's important to receive, test, and report patient samples quickly and safely. Providing a safe and efficient way to perform faecal immunochemical tests (FIT) is key to alleviating burdens on the laboratory, while supporting primary and secondary care.

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ACB News

The bi-monthly magazine for clinical science

Issue 666 • August 2020

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Front cover: Credit - Lancashire Teaching Hospitals

The Association for
Clinical Biochemistry & Laboratory Medicine

Better Science, Better Testing, Better Care

ACB President's statement on innovation, learning and investment: reflections on four months of COVID-19

In a statement released to the Royal College of Pathologists and the Science Media Centre Press List on 19th June 2020, ACB President Professor Neil Anderson reflected on the learning and innovation from the last four months of COVID-19.

Public Health and NHS laboratories continue to significantly contribute to the government's COVID-19 testing targets. Many of our ACB Members work in these laboratories to help prevent, diagnose and treat illness using their knowledge of science and their technical skills. Through their hard work, skill and innovation ACB Members have supported the UK's COVID-19 response by supporting the roll out with high quality testing on a novel pathogen unheard of four months ago.

This ability to respond rapidly to pandemics must be built on and invested in if we are to be ready for future urgent public health needs.

Reflecting on our profession's efforts since March 2020, I outline three areas of innovation and learning that need continued investment and resources:

1. Validating and rolling out new tests

Innovation

Within a few weeks of a COVID-19 pandemic being announced a daily test capacity of tens of thousands was established in Public Health and NHS laboratories by a dedicated, expert professional workforce of Clinical and Biomedical Scientists and Medical Staff. This capacity was achieved by Public Health and NHS Laboratories rapidly validating and rolling out testing for a novel pathogen against a backdrop of unprecedented global demand for reagents and consumables.

Innovation across the diagnostics community contributed to this rapid response. NHS laboratories reconfigured their workforces to establish COVID-19 testing labs to provide 24/7 services to patients within six weeks. Colleagues in industry scaled up the production of swabs and testing reagents – both vital to carrying out the most accurate testing methods for COVID-19 and new markers for patient management. Clinical and Biomedical Scientists carried out cutting-edge research and rapidly shared new information with peers in laboratories across the UK.

Learning

- **Invest in existing highly skilled public health and NHS staff and accredited laboratories**
  Public Health and NHS laboratories are able to respond rapidly to increased demand for testing if they are given the resources, freedom to innovate and create networks with peers in sister laboratories. Effective coordination and use of Public Health and NHS laboratories at the start of the COVID-19 pandemic could have led to a rapid mobilisation of existing highly skilled workforce and infrastructure allowing existing Public Health and NHS laboratories to have met the required testing capacity without the need for the creation of additional laboratories.
- **Consult the diagnostics community at the start of an urgent public health need for a rapid response**
  Consulting the diagnostics community, including professional bodies, at the start of an urgent public health need, such as a pandemic, would result in a fast response as supply chains could be set up quickly and existing laboratories with qualified, regulated, experienced staff reconfigured could be mobilised rapidly to provide round the clock access.

2. Infrastructure and pathways to rapidly test vast numbers of people

Innovation

Existing Public Health and NHS laboratory staff are skilled at communicating the value of test results to those who need them; clinicians, infection prevention and control teams, and public health experts.

In the case of COVID-19, reliable antibody tests introduced at scale can give some indication of how many of the population have been infected. Central to providing accurate test results on a vast number of people is ensuring the end-to-end quality of the test – from identification of the individual, taking the sample, transportation, testing, interpretation, and reporting of the result. It is vital that each component is joined up in order to deliver a rapid response, high quality testing and useful data that can inform effective clinical and public health action.

Public Health and NHS laboratories have well-established, strong links across each part of the process for many existing tests. This process is the best way to carry out the large scale adoption of novel tests. To meet the COVID-19 testing needs, Public Health and NHS laboratory staff built on this existing process and introduced innovations such as setting up new IT systems for rapid communication of results, standardising processes to make sure quality is maintained across laboratories and establishing new communication networks between laboratories for rapid sharing of information.

Learning

- **Invest in existing, well-established and high quality testing processes and communication networks**
  The best way to carry out mass testing is through adapting well-established processes and communication networks where end-to-end quality

testing can be relied upon. Investing in these established networks and pathways will make sure Public Health and NHS laboratories remain ready for any future mass testing programmes.

3. Using test data to shape public health policy and patient care

Innovation

Clinical and Biomedical Scientists and medical staff are now looking at how to use data from mass testing for COVID-19 beyond surveillance into improving patient care.

Linking COVID-19 test results with other data sets, such as patients with coagulation disorders, will help Clinical and Biomedical Scientists understand the way COVID-19 infection works in people with different risk factors.

Learning

- **Invest in trained, registered scientists to make the most of testing data**
  Trained, registered Clinical and Biomedical Scientists have the skills to innovatively use data sets in a way to improve patient health outcomes.
- **Consult Clinical and Biomedical Scientists at the start of urgent public health needs to get the most out of tests and data**
  Involving our community in responses to urgent public health needs, such as pandemics, will make sure new tests are adopted with clear advice on the intended purpose of the test as well as make sure data collected through testing is useful, relevant and contributes to better patient care.

Investment in pathology services is vital for the future preparedness

The COVID-19 pandemic has shown the invaluable service Laboratory Medicine provides. We must continue to invest in the innovations Clinical and Biomedical Scientists have developed over the last four months if we are to be ready for future urgent public health situations.

What's needed for rapid responses to future urgent public health situations?

- **Invest in existing highly skilled public health and NHS staff and accredited laboratories** for rapid responses.
- **Invest in existing, well-established and high quality testing processes and communications networks** including equipment and supplies as well as communication networks between laboratories across the UK and supply chains.
- **Consult the diagnostics community at the start of an urgent public health situation** for a rapid response, informed decision making and effective use of data and resources.

For further information please contact: **communications@acb.org.uk**

News from the ACB HQ

Well, here we are at the beginning of August and the office and the surrounding area in London Bridge is still very quiet. I am back at my desk with the rest of the ACB team working remotely for the most part. Since the June *ACB News* we have held our first virtual AGM (see Sarah Glover's piece on pages 25 and 26) with a record attendance and we are close to the launch of our new digital platform (more details from Mike Lester on page 17).

The Scientific Committee launched a special scientific scholarship in June with the support of Abbott with a total fund of £50,000 available for COVID-19 related innovations. Applications, which closed last week, show an increase of nearly 100% on previous years. Our thanks go to the Scientific Committee for working hard on assessing the applications. The successful applicants will be announced later this month.

During July we surveyed Members about our National Meetings plans for next year. As you know we had provisionally moved FiLM and Focus in Belfast to March 2021. However, with the continuing uncertainty and worries about a second wave of the pandemic we decided to ask our Members what they would like to see in 2021. We had a great response so thank you to the 155 respondents for both your response to our questions and for sharing your ideas and insight. It was clear from the results that the overwhelming majority favour a virtual meeting format for 2021 not only because of the anxiety around further disruption caused by the pandemic

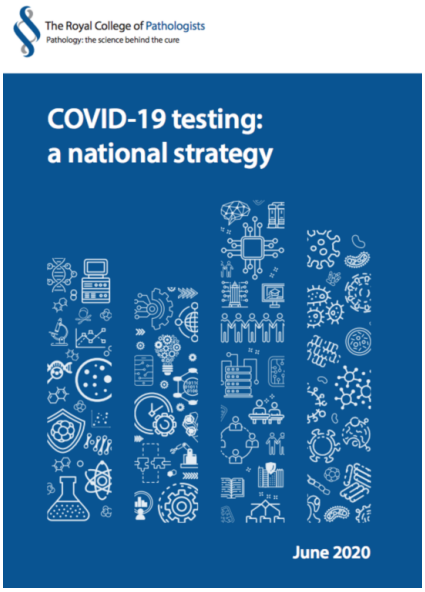
but also the opportunity we can create for more people who because of financial, work-related or mobility issues are not able to participate. We will discuss findings and recommendations at the August Executive Committee meeting and update you on the 2021 programme over the next few weeks.

Rest assured though, we know how important it is for members and stakeholders to get together. Whilst we are embracing the opportunities presented by virtual meetings and workshops we will definitely be planning to create opportunities for you to meet colleagues in person as soon as is practical and I look forward to meeting as many of you as possible when that happens.

In the meantime, stay well and thank you for your continued commitment and dedication. ■

Jane Pritchard

RCPath COVID-19 testing: A national strategy



As we move forwards from the first wave of the COVID-19 epidemic, the approach to SARS-CoV-2 testing is also moving rapidly, both for viral detection and for testing the immune and protective immune responses to it. The initial wave has impacted, but further cases are likely unless and until an effective vaccine with long-term protective efficacy becomes available and widely used.

This document from the Royal College of Pathologists, sets out a vision for a future strategy with which clinical, scientific and policy stakeholders, including patient advocacy groups, can align. It forms the basis for a roadmap to delivery. It applies equally to all settings in which care is delivered, across all our population, and all age groups.

This strategy is based on a set of seven principles, which underpin four key workstreams:

- Testing matched to purpose and pathways.
- Innovation to adoption.
- Infrastructure and workforce for a stable future.
- SARS-CoV-2 is not the only virus.

The ACB officially supports this document and Lab Tests Online-UK is listed as a key way of raising national awareness of testing in the strategy's principles.

The full report can be found here: **http://www.acb.org.uk/whatwesay/acb_newspage/2020/06/11/royal-college-of-pathologists-covid-19-testing-a-national-strategy** ■

NHS Staff Council guidance on annual leave during COVID-19

During "business as usual" times local negotiating forums would have established arrangements regarding the taking and carry-over of annual leave. Leave and appropriate rest and recuperation is an important component in the health and well-being of all staff. It is acknowledged that the demands of the COVID-19 emergency, restart of delayed NHS services and cancellation of holiday plans have challenged those arrangements.

On 21st July the NHS Staff Council published jointly agreed guidance to help local negotiating forums come to appropriate arrangements to support both their services and staff well-being. The guidance can be downloaded here: **https://www.nhsemployers.org/news/2020/07/nhs-staff-council-guidance-on-annual-leave-during-covid19** ■

SIREN – SARS-COV2 immunity and reinfection evaluation

NIHR | National Institute for Health Research

The impact of detectable anti SARS-COV2 antibody on the incidence of COVID-19 in healthcare workers

Many members will be involved in this study which aims to find out whether healthcare workers who have evidence of prior COVID-19, detected by antibody assays (positive antibody tests), compared to those who do not have evidence of infection (negative antibody tests) are protected from future episodes of infection.

See the relevant item on the NIHR website for more information: **https://www.nihr.ac.uk/covid-studies/study-detail.htm?entryId=284460**

Public Health England

Public Health England

COVID-19 – head to head laboratory evaluation of 4 commercial serological assays

In partnership with academic collaborators at the University of Oxford and Oxford University Hospitals, PHE Porton Down carried out a head-to-head evaluation of 4 commercially available assays against the Medicines and Healthcare products Regulatory Agency (MHRA) Target Product Profile for laboratory tests to detect production of SARS-CoV-2 antibodies. This was in response to a commission from the Secretary of State for Health and Social Care.

The 4 commercial tests considered were manufactured by Abbott, DiaSorin, Roche and Siemens. Positive and negative sample sets were assembled for the evaluation comprising of approximately 1,000 pre-pandemic (negative) and over 500 positive convalescent samples from individuals confirmed to have had SARS-CoV-2 infection.

https://www.gov.uk/government/publications/covid-19-head-to-head-laboratory-evaluation-of-4-commercial-serological-assays

The Academy of Medical Sciences

The Academy of Medical Sciences

Preparing for a challenging winter 2020/21

There are concerns the UK could face another wave of COVID-19 this winter, at a time when the NHS and social care system is already stretched to the limit. The Academy of Medical Sciences was asked by the Government's Chief Scientific Advisor to look ahead to winter 2020/21, forecast the worst-case scenario and then draw up a plan. This report was prepared by leading scientists and doctors, with support from a patient and carers group and a series of discussions with the public.

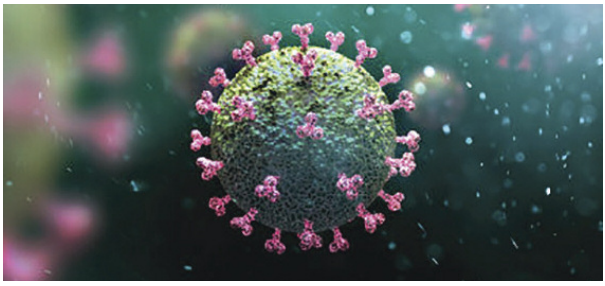
View the public summary and the full report here: **https://acmedsci.ac.uk/**

Six months of coronavirus: the mysteries scientists are still racing to solve

From immunity to the role of genetics, *Nature* looks at five pressing questions about COVID-19 that researchers are tackling. Read the full article here: **https://www.nature.com/articles/d41586-020-01989-z**

COVID-19 online learning

The Royal College of Pathologists recently ran seminars with topics covering epidemiology of the virus, testing and diagnostics and clinical presentation and management. These are now all available to view on the College website: **https://www.rcpath.org/**



Support for Retired Members

Ruth Lapworth MBE, Organiser, Retired Members' Group

We recognise Retired Members might be experiencing particularly difficult periods of isolation. If you would like to connect by email or telephone with other Retired Members in the current circumstances, let us know by emailing **retired.connections@acb.org.uk**

Send us your good news stories

Have you heard about a lab doing incredible work on COVID-19 testing? Or perhaps you'd like to share how you're staying positive during self-isolation? Email **communications@acb.org.uk** with your experiences during this difficult time to share with other Members.

Have you seen inaccurate reporting of science in the press?

The ACB has a role in ensuring that the influencers of public opinion are hearing from experts to inform their reporting. If you see inaccurate science reporting of COVID-19 testing in the press, please let us know asap by emailing **communications@acb.org.uk** and the ACB Communications team will consider how best to respond to make sure the inaccuracies are corrected, for example, by issuing an expert briefing to the press.

Keep up to date with COVID-19 news on the ACB website:
http://www.acb.org.uk/whatwesay/covid19-updates

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Bile acid diarrhoea is estimated to affect 1% of people in the UK.[1]
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1. Vijayvargiya P, Camilleri M. Current practice in the diagnosis of bile acid diarrhea. Gastroenterology 2019;156:1233-1238

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Call for nominations for two positions of National Member to join ACB Council

Would you like to have a say in the future of the ACB? Are you keen to find out more about what your Association is working on? Do you have ideas on how the ACB could further serve its membership?

We welcome all ACB Members to put themselves forward for nomination for the position of National Member on the ACB's Council. In order to represent the views and voices of all ACB Members, Council members include Healthcare Scientists and medical practitioners with backgrounds in Laboratory Medicine including Biochemistry, Immunology and Microbiology. We currently have two National Member position vacancies. We particularly welcome and encourage applicants from minority ethnic backgrounds.

What's the commitment?

Council meets at least twice per year. The role of the ACB Council is to preside over the governance and strategy of the ACB, to help guide the long term vision for the organisation and inform the ACB's policy making. Council members are expected to attend each meeting.

Legal announcement

In accordance with the provision of Articles 11 and 14 as outlined in the Association Bye-Laws subsections 6.2 and 6.3, nominations are called for the position of National Member of Council.

How do I apply?

Nominations for this position, duly countersigned, should be made on the nomination form on page 39 in this issue of *ACB News* and sent to: ACB Administrative Office, 130-132 Tooley Street, London SE1 2TU by 5pm BST 4th September 2020.

Informal enquiries

Mike Lester, ACB Member Services and IT Administrator, Email: **mike@acb.org.uk** ■

Sudoku This month's puzzle

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

Solution for June

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

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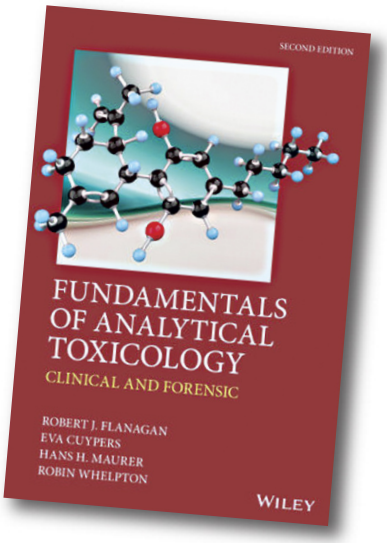
Fundamentals of Analytical Toxicology, 2nd Edition (2020)

We are delighted to announce the publication of the 2nd Edition (ISBN 978-1-119-12234-0) of this important text. It includes new chapters on TDM, substance misuse screening, and 'unknown' screening, whilst LC-MS is discussed in detail. The lead author once again is Professor Bob Flanagan.

This book aims to give principles and practical information on the analysis of drugs, poisons and other relevant analytes in biological and related specimens, particularly clinical and forensic specimens, i.e. it is a 'toolkit' in modern parlance. As such, this volume extends the scope of the World Health Organisation (WHO) basic analytical toxicology manual and builds on the success of the first edition of this work that appeared in 2007. Moreover, it is intended to complement Dr Randall Baselt's *Disposition of Toxic Drugs and Chemicals in Man* (Edition 12. Seal Beach: Biomedical Publications, 2020), which remains the seminal reference work as regards the interpretation of analytical toxicology data.



For further information, please visit: **https://www.wiley.com/en-gb/Fundamentals+of+Analytical+Toxicology%3A+Clinical+and+Forensic%2C+2nd+Edition-p-9781119122340** ■

Westminster Health Forum and Westminster eForum Policy Conference

Development and rollout of Test and Trace, and the future of the COVID-19 contact tracing app

Wednesday, 5th August 2020 8:30-13:00

For further details please use the following link:
https://www.westminsterforumprojects.co.uk/conference/Key-priorities-for-developing-a-COVID-10-contact-tracing-app ■

Condolences

It is with regret that we must inform you of the sad news of the death of Dr John Harrop, who was Consultant Chemical Pathologist at the Royal Derby Hospital before his retirement. An obituary can be found on page 36. ■

Westminster Health Forum Policy Conference

Next steps for diagnostics and pathology – innovation, collaboration, standards, and the response to the COVID-19 pandemic

Wednesday, 16th September 2020 9.00-13:00

This online conference will examine the key issues facing diagnostics and pathology as the sector responds to the COVID-19 pandemic.

There will be keynote contributions from: **Professor Sir Mark Caulfield**, Chief Scientist, Genomics England; **Professor Jo Martin**, President, Royal College of Pathologists; **Rebecca Albrow**, Associate Director, Diagnostics Assessment Programme, NICE; **Doris-Ann Williams**, Chief Executive, BIVDA; **Dr Laszlo Igali**, Interim Chair, Pathology Standards Governance Board; and **Dr Saoirse Dolly**, Consultant, Rapid Access Diagnostic Clinic, Guy's and St Thomas' NHS Foundation Trust.

The agenda:

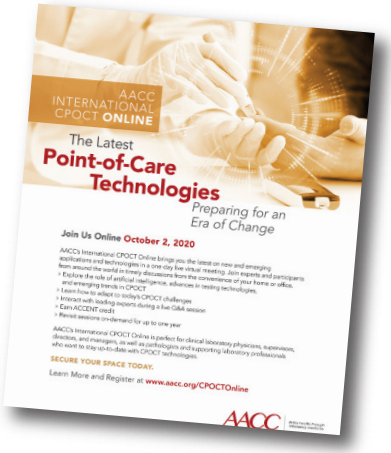
- Rolling out imaging and pathology networks – and lessons from COVID-19 response.
- Diagnostics and COVID-19 – the sector response and key learnings for the future.
- Improving diagnostic times for cancer and learning from Rapid Diagnostic Centres.
- Accelerating the diagnostic process - responding to the COVID-19 pandemic, and the impact on wider diagnostics, standards and upgrading infrastructure.
- The role of standards in pathology in supporting and enabling innovative solutions.
- Innovation in diagnostics and pathology – utilising data and artificial intelligence to respond to urgent need, encouraging uptake, and developing personalised treatments.
- Evaluating diagnostic technologies and assessing barriers to adoption – regulation, uptake and innovation.

For more information, or for online booking, please go to: **https://www.westminsterforumprojects.co.uk/book/next-steps-for-diagnostics-and-pathology** ■

AACC's International CPOCT online

Join us online on 2nd October 2020

AACC's "International CPOCT Online" brings you the latest on new and emerging applications and technologies in a one-day live virtual meeting. Explore topics in advanced testing approaches, artificial intelligence, infectious disease, and more while earning ACCENT credit. Join experts and participants from around the world in these timely discussions from the convenience of your home or office. Learn more and register here: **www.aacc.org/CPOCTOnline** ■



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What's new on Lab Tests Online-UK?

Most popular news articles

- The role of NHS laboratories in COVID-19 testing, 11th May 2020
- Expert briefing on antibody tests and viral detection, 15th May 2020
- COVID-19 and vitamin D, 15th May 2020

Visit *In the News* on Lab Tests Online-UK for the full library of news articles.

Recently updated articles

Tests

- Islet Autoantibodies in Diabetes ***NEW***
- eGFR-estimated Creatinine Clearance
- ACTH Test
- Pleural Fluid Analysis
- Coronavirus (COVID-19) Testing
- hCG Test

Conditions

- Pancreatic Cancer
- Chronic Fatigue Syndrome
- Heart Disease
- Diabetes
- Fungal Infections
- Inflammatory Bowel Diseases
- Pituitary Disorders

Articles

- DNA Sequencing ***NEW***
- COVID-19 Resource ***NEW***

Top 12 visited articles

HbA1c Test, Full Blood Count (FBC), C-Reactive Protein, Erythrocyte Sedimentation Rate (ESR), Liver Function Tests, PCV, Kidney Disease, Anaemia, Autoimmune Disorders, Vitamin B12 and Folate Deficiency, Liver Disease, Systemic Lupus Erythematosus

Website users: 529,784
Users interacting with website for up to 30 mins: 674,699
Page views: 1,162,421
Top websites referring visitors to Lab Tests Online-UK: SystmOnline-TPP, NHS.UK, Patients Know Best, NHS Inform, MyCare UCLH, PatientView, Cancer Research UK, Gloucestershire Hospitals NHS, Evergreen Life, My Medical Record-UHS

Lab Tests Online-UK is written by practising laboratory doctors and scientists to help you understand the many clinical laboratory tests that are used in diagnosis, monitoring and treatment of disease. It is produced by the Association for Clinical Biochemistry and Laboratory Medicine in collaboration with the American Association for Clinical Chemistry and support from the Royal College of Pathologists and the Institute of Biomedical Science.

If you would like to sign up for the newsletter, request a Champion Pack or Promotional materials, please fill in the online form: **labtestsonline.org.uk/form/show-your-support**

The Association for Clinical Biochemistry & Laboratory Medicine
Better Science, Better Testing, Better Care

IBMS

The Royal College of Pathologists
Pathology: the science behind the cure

Email: **labtestsonlineuk@acb.org.uk** Website: **labtestsonline.org.uk**

New ACB digital platform on its way!

Mike Lester, ACB Member Services & IT Administrator

Many of you will already be aware of the development of the new digital platform for ACB Members to replace our aging website and membership database. I am delighted to inform you that we are on track for launch this month. We have worked tirelessly over the last few months on the design and functionality of the platform as well as the more laborious tasks of data, content and file migration, to bring you everything you enjoy and more from the ACB in a modern, user-friendly and intuitive way. Thank you to all of those involved!

A digital platform designed to meet your needs

These are exciting times for the Association and its Members. We have listened to your responses to the Members' survey last autumn which has steered us towards an ACB digital platform for Members, with new functionality we are confident you will appreciate, such as a CPD repository (where Members can record their activities with associated documents and reflective notes), new groups and communities forums, the ability to set preferences for a more personalised experience based on what interests you most and more flexibility in how you manage your subscriptions. When ACB national and regional events start again in their various forms you will also experience how the new functionality works seamlessly with event bookings and pre/post meeting material.

Getting started with the new digital platform

All of this comes with a request, one that I hope is not too onerous. On first login you will be greeted with a short welcome form. To get the most out of the new website, and your membership as a whole, we will need you to complete some information about your current employment, professional activities and interests. There will also be a short equality, diversity and inclusion questionnaire. Responses to this are optional and will be kept confidentially for statistical reporting purposes only (unless stated otherwise) and where no Member can be identified based on their responses. Also please make sure we have the most up-to-date email address for you as this is where instructions will be sent to gain access to the new site. If we don't have your current email address, or if you have any comments or questions in general, please let me know at **mike@acb.org.uk** and I will be very happy to help.

You can expect your new login instructions in the coming weeks and will be kept informed as we add further content and the functionality grows to meet your needs. We hope you enjoy it for years to come and help us to continuously improve your digital experience with the ACB by using all the features and feeding back to us on your experience. ■

ACB Benevolent Fund

If any member of the Association, or its staff, is facing financial hardship they are welcome to apply for assistance to the ACB Benevolent Fund, which is available to help them in times of need.
Applications should be sent to Professor Neil Anderson, Chair of Trustees, ACB Office. ■

The Diggle Microbiology Challenge

These multiple-choice 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 19 from June's ACB News

Can you link the correct organism with the pathogenicity described?

1. *Vibrio cholera*
2. *Clostridium tetani*
3. *Clostridium botulinum*
4. *Bacillus anthracis*
5. *Corynebacterium diphtheriae*

A. *Increases adenylate cyclase with overproduction of cAMP, leading to a net outflow of fluid and electrolytes.*
B. *Produces oedema factor and necrosis factor and protective factor to cause disease.*
C. *Binds Ach synthesis by interference with ribosylation of elongation factor.*
D. *Blocks inhibitory neurones in CNS resulting in spastic paralysis.*

Answer

A-1, B-4, C-3 and D-2.

Question 20

Can you match the most likely mycobacterial pathogen with the indication?

1. *M. avium*
2. *M. ulcerans*
3. *M. paratuberculosis*
4. *M. marinarum*
5. *M. malmoense*

A. *6 year old boy presents with painless solitary cervical lymphadenopathy. No history of TB contact. Otherwise well. Aspirate of lymph node is AAFB+.*
B. *African immigrant presents with a chronic ulcer on his foot. Biopsy of edge of ulcer is AAFB+.*
C. *A CF patient who attends the OPD has 3 consecutive sputum specimens over 3 months which are positive for AAFB and growth on LJ slop in 4 days.*

The answer to Question 20 will appear in the next issue of ACB News – enjoy!

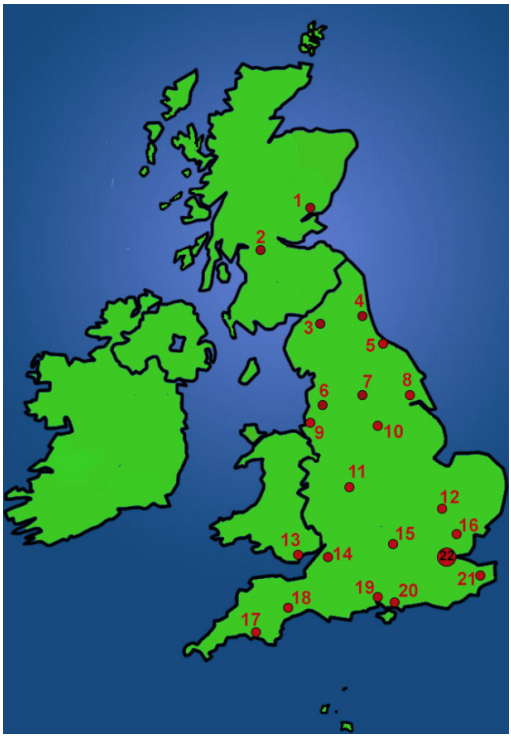
Clinical Scientists in Immunology: A small but passionate team

Rachel Wheeler, South West London Pathology, St George's Hospital, London

Immunology is a relatively small discipline in the world of diagnostic laboratory science, as highlighted in a recent article in *The Bulletin* (the membership magazine of the Royal College of Pathologists; April 2020, p80-82). Immunology laboratories vary widely in where they sit within pathology services, from dedicated Immunology departments staffed by medical and scientific staff tightly linked to allergy and immunodeficiency clinics, to sub-sections of blood science departments. Immunology services vary in their repertoire of tests and techniques, and trainees often find it valuable to visit a number of Immunology departments during their training, to broaden their experience.

There are not many Clinical Scientists in Immunology in the UK. To illustrate this, the Immunology Professional Committee (IPC) has created a UK map showing the centres where Clinical Scientists in Immunology work. We hope this will help our Trainees see where we are across the UK, and help our colleagues to find us!

Clinical Scientists in Immunology usually work in very small teams, or even in isolation, so the existence of a strong national network is vital for maintaining skills, knowledge, breadth of experience and sanity! This network has been very active during the COVID-19 outbreak. A WhatsApp group was started in March by Immunology Consultants to discuss cases seen and possible treatments.



UK map showing hospitals with Consultant Clinical Scientists in Immunology. Go to **http://www.acb.org.uk/whatwedo/immunology-group/where-is-immunology-** *to see the full detail. Please note, the map on the website is being updated to show Immunology training centres*

Discussions now focus on the impact on patients with immune deficiency, and access to more treatment options.

A 'spin-off' group focussing on laboratory testing for SARS-COV2

antibodies was also started in March and includes Virologists, Microbiologists, and other healthcare staff from laboratories, NHS England/Innovation, the Royal College of Pathologists and Public Health England. This group allowed sharing of early evaluation data, sample exchanges, creation of a shared database of test information and evaluation data, as well as some welcome humour by sharing jokes and cartoons from the media. It has been inspiring to see scientists and health professionals from all disciplines come together, to see the talent, skills and resources pooled to tackle this global pandemic.

Deacon's Challenge Revisited

No 9 – Answer

A male adult with Type 1 Diabetes Mellitus forgot to take his insulin. His blood glucose concentration, which was 5 mmol/L, rose to 15 mmol/L in two hours.

Estimate the effect on his plasma sodium concentration, assuming that no other water intake nor loss of water from the body takes place during this time, indicating what assumptions you make.

MRCPath November 1998

It is not possible to get anywhere with this question without making a number of assumptions:

1. That it is plasma glucose that is measured rather than whole blood.

2. That as a result of insulin deficiency there is no increase in glucose concentration in the intracellular fluid (ICF).

3. That the plasma glucose has equilibrated with interstitial fluid so that its concentration in the extracellular fluid (ECF) is the same as in plasma.

4. That there is negligible change in the concentrations of solutes other than glucose, sodium and chloride.

5. That the ratio of ICF:ECF volumes is 2 (i.e. ECF = 14 L, ICF = 28 L for average adult male).

The effect of an increase in plasma (and hence ECF) glucose will be to raise plasma (and ECF) osmolarity. The body will retain water (stimulation of thirst increases intake and stimulation of ADH reduces renal loss) until osmotic equilibrium is restored. If there is a plentiful supply of water then the plasma osmolarity is returned to normal and since the plasma glucose has risen by 10 mmol/L the plasma sodium must have fallen by 10/2 = 5 mmol/L. However, the examiners emphasise that **there is no net loss or gain of body water.** Therefore, water will move from the ICF compartment (iso-osmolar) to the ECF (now hyper-osmolar) until osmotic equilibrium is established. Since movement of water from the ICF leads to an increase in ICF osmolarity, the movement of water is restricted and at equilibrium the ECF will reach a value somewhere in-between normality

and the original value i.e. the osmotic load is shared between the ECF and ICF compartments, both of which become hyperosmolar.

The plasma glucose has risen by 15 - 5 = 10 mmol/L.

Rise in **amount** of glucose in ECF
= Rise in plasma glucose concentration (mmol/L) x ECF vol (L)

= 10 x 14 = 140 mmol

(a slight underestimate since there has been a small expansion in ECF vol)

At equilibrium, the rise in osmolarity (which is the same in the ECF and ICF) is

$$\frac{\text{Increase in amount of glucose in body (mmol)}}{\text{Total body fluid (ECF + ICF) volume (L)}} = \frac{140}{42} = 3.33 \text{ mmol/L}$$

Therefore, since the plasma osmolarity has risen by 3.33 mOsmol/L and the plasma glucose by 10 mmol/L then the amount of NaCl which has been displaced by glucose is

10 - 3.33 = 6.67 mmol/L

and so the sodium has fallen by $\frac{6.67}{2}$ = 3.34 mmol/L

i.e. the plasma sodium concentration has decreased by approximately 3 mmol/L. ■

Question 10

A 15 year old boy presents to casualty following a convulsion. It turns out that he had swallowed 30 of his mother's lithium tablets about 10 hours previously.
On admission, his lithium concentration is 4.1 mmol/L. A decision needs to be made whether to haemodialyse him to reduce the lithium concentration. As this is not going to be available quickly, the physicians want to know how long he will have toxic levels just with endogenous clearance. Estimate the following, indicating clearly any assumptions you have made:

a) The likely volume of distribution of the lithium at this stage in the situation, given a body weight of 65 Kg.

b) How long it will be before his lithium concentration drops to the relatively safe level of 1.5 mmol/L below which toxicity is unlikely, given a clearance of 0.03 L/h/Kg.

MRCPath, May 2001

OSFAs demystified

Katy Hedgethorne, University Hospitals Plymouth NHS Trust

The Objective Structured Final Assessment (OSFA) is the last hurdle to becoming a qualified Clinical Scientist. You've battled your way through OneFile competencies, written up your research project and put in countless hours of revision for those MSc exams. But you knew where you stood with competencies and written exams; we've all done coursework and university exams before and have had years to hone our revision skills. The OSFA is an unknown. You've heard stories from Trainees ahead of you, but they're still shrouded in mystery and you're not really sure how to prepare. Help is here! As a newly qualified Clinical Biochemist, fresh from sitting my OSFAs last summer, hopefully I can dispel some of the myths surrounding this part of the STP programme.

The OSFA is designed to test your practical skills alongside your scientific knowledge, to ensure that you are competent to practice as a Clinical Scientist. It is a series of short one-to-one assessments, each 12 minutes long and designed to test a specific part of the STP syllabus.

The best preparation you can do is to book in for the mock OSFA in spring of your final year. This is an exact run through of the live OSFA (just with only 4 stations) so you'll know what to expect on the day of the real thing. You also receive useful feedback from your assessors to help you prepare. Many regional STP networks run OSFA workshops which are useful to attend.

On live OSFA day you'll arrive at the assessment centre, where you wait in a holding room with the other Trainees in your session. Here you store your belongings and receive a briefing on the examination rules. You are then led in single file up to the exam circuit, where you are directed to wait outside your first station for the assessment to begin. On the sounding of a buzzer the OSFA begins, and you have three minutes to read the station instructions on the wall. Read these carefully: they can be quite detailed, giving you a good idea of what to expect.

Once in the room you quickly introduce yourself to the examiner (who you may well recognise) and sit down. You may have written questions or calculations to work through independently, there may be data to interpret, or the station could be a series of questions posed verbally to you by the examiner. If there is a task to do, the examiner will ask if you are ready to talk through your answers when you have had the allotted time to complete it (there will be a clock positioned prominently on the wall ticking down from 12 minutes). Don't be surprised if you complete some stations more quickly than others and are left with some slightly awkward silence as the clock ticks down. When 12 minutes is up the buzzer will go again, and you'll move onto the next station where you can start to read your next set of instructions. Remember that the mark you are given in one station does not affect the others, so try to focus on the task at hand and don't dwell on your previous stations.

The first session of the OSFA is the generic OSFA. These three stations can test anything in the Professional Practice section of the syllabus, so it does feel like you could be asked anything and you're probably going to feel a bit unprepared. A generic station might test your communication skills or how you would respond to a difficult situation at work:

these aren't skills you can revise, but by the end of three years of training you should be well prepared for these questions if you take your time. Try to mention any relevant buzz words and phrases from NHS and Trust policies that you've read. There might be some basic calculations to do, but all specialties get the same generic stations so there won't be anything discipline specific.

The second session is the specialist OSFA. These nine stations each test discipline specific knowledge or skills. They are of course designed to test you, but they won't be anything that you haven't come across during your workplace training or in lectures, and by drawing on your knowledge and experience you'll be able to work through each question. Don't be afraid to say that you don't know and move onto the next question if you need to; you're not expected to know everything, and you might have time to come back to it before your 12 minutes are up. Remember that the assessors are looking for you to demonstrate competence, overall understanding and that you are 'a safe pair of hands' – all of which you can do without knowing all of the answers.

The rest station (after station 3, 4 or 5) is your chance to sit quietly and clear your head before tackling your remaining stations. 12 minutes can feel like a long time to be sitting on your own with your heart racing, so I definitely recommend taking the toilet break just for the change of scene.

When you come to the end of station 9 you will probably be exhausted. After all, you've been on the circuit for nearly 2 and a half hours. Take a deep breath and try not to worry too much about how each station went. The results will be out soon enough and only then will you really know how you got on.

If things didn't go to plan and you don't pass (the overall performance of Trainees failing 3 or more stations is considered individually by the Exam Board before deciding their final result) you will be invited to attend an OSFA review meeting with your Training Officer and an assessor from your specialty, where you decide on a Learning Plan. You will then be invited to the OSFA resit session in the following November.

Just remember to stay calm, and don't worry if you feel a bit unprepared, because we all do: none of us know which questions are coming. You've made it to the end of the STP, so be confident and trust in your training – you've got this!

Key points to remember

- The OSFA is a series of 12 minute practical/verbal assessments and takes place in July of your final year of training.
- The best way to prepare is to attend the mock OSFA in spring, which includes two generic and two specialist stations.
- The live OSFA is split into two parts: generic and specialist.
- The generic OSFA is 3 stations and tests skills related to professional practice.
- The specialist OSFA is 9 stations (plus a rest station) and tests discipline specific skills and knowledge.
- You are being assessed against the standard of a clinical scientist just prior to registration and are not expected to have the knowledge and skills of an experienced and registered Clinical Scientist.
- You can fail up to three stations across the generic and specialist OSFAs, so don't worry if a couple didn't go as well as the others.
- For more detailed information about the OSFA, visit the NSHCS website: **https://nshcs.hee.nhs.uk/programmes/stp/trainees/osfa/** ■

ACB Annual General Meeting Report

Dr Sarah Glover, ACB Company Secretary

I was delighted to be appointed Company Secretary for the ACB in November 2019 and was looking forward to taking part in my first AGM at Focus 2020. With the difficult decision to postpone Focus in Belfast and of course the impact of the COVID-19 pandemic, we needed to look for an alternative to a face-to-face AGM. We therefore turned to video-conferencing in the form of Microsoft Teams. The ACB Office team were brilliant at setting up the event and organising the logistics, including giving us a walk through practice of the event.

With this being my first AGM and everyone's first virtual AGM, the meeting kicked off with a few housekeeping points to ensure it's smooth running and a quick run through of how the voting process would work, should this be needed.

Our ACB President, Neil, gave an excellent overview of the annual report and activities of the ACB over the last year. Neil spoke of our strategic ambition – *'To be the pre-eminent clinical organisation for Laboratory Medicine in the UK, to promote research and innovation for better patient care and to promote the importance of Laboratory Medicine to the wider community'.*

Highlights of activities in the last year included the appointment of a permanent CEO, Jane Pritchard, the membership survey, in which 72% of members rated the ACB as the same or better than other associations and the improvement work, which has already started on the ACB website. Neil recognised the huge amount of work which has gone into producing a wide range of communications in response to COVID-19 and our recently formed partnership with the Science Media Centre.

Neil provided us with an excellent insight into the next year and the investments being made for the future, including the relaunch of our virtual and physical events and meetings programme, with the support of professional conference organisers. The new website, due to launch late summer, will include a CPD repository, a smoother events booking and membership system and will support the growth of our membership.

Neil also had the pleasure of confirming the appointment by Council of Dr Bernie Croal as President Elect of the Association and of announcing the 2020 Presidents Shield winners; Dr Rob Shorten and Dr Liz Bateman, for their role in invigorating their Professional Committees and ensuring the engagement of Microbiology and Immunology in the ACB. Congratulations to Bernie, Rob and Liz.

Mike Bosomworth gave an overview of the Association accounts. There was a significant loss in 2019 and a further loss is projected for 2020 as we replace aging IT software and management systems. These are very necessary changes if the ACB is to grow its membership and prosper in years to come.

There was an initial negative impact of the COVID-19 pandemic on the market value of investments, but reassuringly there has been some bounce back. Investments will almost certainly recover over time and with long term investment planned, there is no imminent need to draw down from them. Mike put forward

the proposal from Council to increase membership subscriptions in line with the Consumer Price Index, this was accepted without any objections.

Disappointingly we have received no nominations for the vacant National Member positions despite repeated advertising in *ACB News* and on the website. This is an excellent opportunity to give back to your Association, to support your colleagues and find out what is happening with your profession nationally. The posts are re-advertised in this issue of *ACB News* on page 39, any interested Members should consider putting themselves forward.

I was honoured to announce the five regional nominations received for the election of Fellow and Honorary Members. Nominations were received from the Southern and Trent, Northern and Yorkshire Regions with awards confirmed for Prof Martin Crook (Honorary), Dr Andrew Taylor (Honorary), Anne Trewick (Fellow), Dr Mick Henderson (Honorary) and Dr Dermot Neely (Fellow). The ACB Council would like to encourage nominations from all regions to recognise the achievements and contributions to the ACB of individual members. Please keep a look out for the nominations call in *ACB News*, early next year.

The final agenda item was the proposal of the Special Resolutions agreed by Council, for changes to the Articles and Bye-laws of the Association. This saw the unopposed introduction of National Meetings Secretary, Chair of the Immunology Professional Committee and Chair of the Microbiology Professional Committee to Executive Officer Positions and the flexibility to introduce rolling subscription years rather than strictly calendar years.

With 58 voting Members, attendance at the AGM was greater than in recent years, suggesting the virtual nature of the event may have enabled greater participation. A huge thank you to Mike and Christina from the ACB Office, for their hard work and organisation, to ensure the smooth running of the AGM. ■

FCS Annual General Meeting Reports

Dr Emma Lewis, FCS Chair

This year FCS has been working with the NHS Trade Unions on a variety of topics that are relevant to our members.
We continue to work with NHSI around the Pathology Improvement project, meeting with Unison and Unite whose members are also affected by the changes, and David Wells who is heading up the project. This allows us to feed back issues and problems with the changes that are being made.

We are collaborating with other Trade Unions on the Staff Council to bring up issues that are affecting our members and to inform our members of new policies and updates. With the social partnership forum we are talking to all the Trade Unions involved in Health and Social Care to bring in our knowledge of issues on the 'shop floor' and to feed into Department of Health and Social Care (DHSC). This has been especially relevant recently.

We are still working with staff within Public Health England (PHE) to support our members within the organisation. This has included talks about potential relocation of staff and terms and conditions of those who are on different pay scales within PHE.

We have our own pension's expert within FCS and he is working closely with the pension agency and others on all issues affecting pensions, including the potential changes to the pension contributions system, and the recent McCloud court judgement about public health pensions and the implications for all our pensions.

As ever, we have endeavoured to keep all our regional and local reps up to date with all these matters so they can help inform members and deal with any issues that may arise. ■

Mr Geoff Lester, NHS Staff Council Representative

I remind members that, since the inception of Agenda for Change in 2004, NHS Staff Council has negotiated terms and conditions. Since legislation governing public sector pensions came into force in 2015 the Scheme Advisory Board has advised the Secretary of State on desirable changes to the pension scheme.

I also remind you that all members of the ACB are automatically members of the FCS.

It has been a different year to normal for obvious reasons and the activity of these bodies over the last year can really be split into pre COVID-19 and COVID-19.

Pre COVID-19 the key areas of activity were around the ongoing reform of pay and moving into year 3 of the pay deal. A briefing was issued on this, detailing each year of the process and its complexities. In this third year some top up payments have come into play to ensure no detriment occurs in the migration to the new pay structure. How the 5 and 10% "re-earnable pay" will operate at band 8c and above is still under discussion with official guidance in development. Considerable work has also been done to look to reach agreement with employers on buying and selling annual leave. Whilst agreement wasn't reached, a joint statement on good

practice was jointly published.

One problem that did arise in year 3 affecting bands 8c and above is that for those staff receiving a top up, any percentage based enhancements were calculated off the lower base salary not the topped up value. This will be corrected in the July pay slip onwards.

This year also saw the publication of the NHS People Plan. Various work streams have been set up to look at different aspects of this and Staff Council's position on it. These and some of the above projects are on hold due to redirecting efforts to COVID-19.

During COVID-19 it will come as no surprise that the response to the emergency has occupied the bulk of our activities. There are many areas that have been and are being discussed regularly (at an increased frequency due to the speed of change) in relation to protecting staff during COVID-19. PPE and the impact on the safety of our staff has been important to understand.

There was also significant work on overtime payments for all bands of staff, with it ultimately being left to local policy. There has been collaborative work on ensuring redeployed and returning staff are fairly treated, including standardised job descriptions/contracts and death in service agreements all underpinned by a policy of no-detriment. There is ongoing work to ensure that those on bank/short term contracts don't lose income and move them to a source of guaranteed income. In addition, testing has been a major source of conversations in regards to working to ensure everyone's role in the process is clarified and that all laboratories performing testing are working to the same standard.

In addition to COVID-19, work has already begun on the next pay claim to follow the end of the 3 year pay deal.

NHS Pensions

Pensions should be a boring topic – the contributions go almost without you noticing and you enjoy a good secure pension when you retire. This year has been exciting for pensions. The first required revaluation of the scheme since the new 2015 scheme was devised was completed concluding that the "cost cap" – the mechanism to ensure value for money for both scheme members and the tax payer (i.e. The Treasury) – was breached, but by not delivering enough benefit for members. HMT never expected that!

We had just started addressing how the extra contributions members had paid should be used to your benefit when events were overtaken by legal cases "McCloud" and "Sargeant". After a long legal process the courts determined that in these schemes the protection arrangements to protect those near to retirement when the new CARE schemes were introduced were age discriminatory. Therefore some remedy of that illegal situation must be put into place.
The government have declared that the remedies must apply across the whole of the public sector, including the NHS, even though not part of the original cases. The Scheme Advisory Board is working with NHS Employers and DHSC to advise on how the remedy should work within Treasury limitations.

The likely outcome is that all those in the schemes before 2015 are transferred back into their original (final salary) 1995/2008 scheme until a future "remedy date", expected to be 2022 or 2023, when everyone will be transferred to the 2015 CARE Scheme.

Complications are that some members may be better off staying in the 2015 scheme from its outset and that there are costs to the return to final salary based schemes, which use up that extra

contribution already paid triggering a re-run of the revaluation process. Those who have retired or had other life events since 2015 will also have to be reconciled.

We expect to see consultation of the necessary legislation in the autumn. Watch this space. ■

Lisa Garrison, FCS Secretary

This has been a quieter year in terms of committee work. The Government has been heavily distracted by planning for the exit from the European Union and items that we had expected to be on the statute books are still outstanding including such things as the redundancy pay cap.

We have however been involved with the ACB in planning the new website and deciding how our information should be displayed.

Member's cases

We have continued to provide advice on a variety of topics to our members and support them, where necessary, with workplace issues. Whilst some issues are straightforward, there are others that require more specialised advice and we are grateful to our industrial relations rep at the CSP for her input into some of the more tricky cases.

Training days

It is still proving challenging to get people together for training days so most training has continued to be via teleconference, with training on a specific issue. We have had a number of these this year on a variety of subjects that are of relevance to our members such as part time working. These have again generally been well received but we would hope to plan face-to face training days this year.

Committees

There are still a few regional representatives' vacancies on the Committee, notably from the North East and Manchester/Lancashire. Paul Cawood from Scotland has retired from his NHS post but we still need to replace him as the Scotland representative. Mike Cornes has taken over duties for the NHS Staff Council, however Geoff is still informally involved and continues to advise on pension matters.

Wider working

This year we have been working with other Trade Unions on matters that are important to our members through a variety of routes. We have tried to use our knowledge to influence policies and provide feedback on changes within pathology.

Thanks

We would like to thank Emma Lenehan from the CSP for providing our industrial relations service, working with us on some of our cases and providing our training. We would like to thank the office staff at Tooley Street for all their help and support during the year. ■

A Biochemist in a surgical land: attending BOMSS 2020

Ewen Millar, Specialist Registrar, Aberdeen Royal Infirmary

Given my background as a Trainee in Chemical Pathology, it was with some trepidation that I approached this year's British Obesity and Metabolic Surgical Society Meeting (BOMSS 2020) in January. I need not have worried. It was a massive multidisciplinary event at the newly opened TECA (The Events Complex Aberdeen), and all credit should be given to the organisers for managing the deft trick of making such an enormous undertaking seem so effortless, whilst laying on a splendid programme that ran the gamut of specialities, allowing for cross-disciplinary discussion. Given this breadth I have not been able to summarise everything that occurred, but there was a lot on offer for the Clinical Biochemist or Metabolic Medicine physician at this event.

Training Day highlights

Day 1 began with an interactive multi-disciplinary discussion surrounding the assessment and preparation of the bariatric surgical patient, with the multi-disciplinary Aberdeen bariatric team fielding a discussion surrounding the suitability of several patients for bariatric surgery. Present were a plethora of senior Surgeons from across the UK, interspersed with colleagues from Psychology, Dietetics, Nursing, and the odd Chemical Pathologist dotted about.

Interactive audience voting via Ombea brought home the diversity of opinions surrounding both the viability of the surgical candidate(s), and the logistics of managing a finite resource with significant demand. Questions of resources were especially interesting given the diverging health provision structures of Scotland and England, and the presence (or absence) of a Tier 3 community-based weight management service – which we no longer have in Aberdeen.

The day progressed further into medico-legal and ethical quagmires with Dr Kevin Deans (Consultant in Chemical Pathology, Aberdeen) discussing the thorny issue of Bariatric Tourism, which would often involve UK patients potentially deemed unsuitable for surgery in the UK travelling afar for their surgery to save money. Who was responsible for their follow-up when they returned to the UK?

Everyone agreed that, for emergency care, the NHS was the appropriate – the quagmires began when the question of who is responsible for routine care, including nutritional follow-up and support (often provided by Chemical Pathologists and Dietitians), was posed. Given that it would be impractical to send the patient back to (say) Poland for their vitamin prescription (despite some audience members voting for this option) – should the UK taxpayer foot the bill?

To further complicate matters, Dr Deans drew our attention to EU legislation that allowed patients to source their own surgery anywhere in Europe, provided they would have been eligible in the UK, and then claim the cost back from their local Health Board or Trust.

Conference highlights

It was an early start on days 2 and 3, with the smell of coffee permeating (perhaps to help stave off the effects of the evening festivities), and the conference divided into parallel sessions, before reconvening for key note speakers.

Holistic approach

Caroline Albers (Dietitian, Dutch Obesity Clinic) discussed a difficult case about a patient, 8 months post bariatric surgery, who was displaying signs of obsessions about food intake and weight, and compulsive behaviours, including sticking to an almost-exclusive liquid diet, and compulsive cleaning. The patient was significantly malnourished, with weight loss, and had suffered bouts of hypoglycaemia. The speaker opened the case to the floor, and the surgical response tended to cluster around bringing the patient in for scoping and further medical investigation, a necessary step, but one that, to my mind, may have to be supplemented with the input of our colleagues in psychology and psychiatry to provide a holistic therapeutic framework.

Cost-effectiveness

Professor Alison Avenell (University of Aberdeen) presented her exacting cost-effectiveness analysis for bariatric surgery, the look AHEAD weight loss trial, and a variety of weight management programmes from the NHR funded REBALANCE study. She had found that most interventions were cost effective by NICE criteria, with the exception of adding a very low energy diet to an existing weight management programme.

Pre-op cardiovascular risk factors

Mr Hayder Shabana (Bon Secours Hospital, Cork) presented fascinating research looking at the association of preoperative cardiovascular risk factors and coronary artery calcium (CAC) scores in patients about to undergo bariatric surgery (noted that higher CAC scores were associated with higher cardiovascular risk). Interestingly, he also noted that patients with lower CAC scores had more weight loss than their counterparts over a 12 month period.

Endobarrier vs gastric bypass

Dr Aruchuna Raban (Imperial College, London) spoke about how trimethylamine and TMA-n oxide (TMAO) increased after gastric bypass, but decreased with the duodenal-jejunal bypass liner (Endobarrier). This barrier is an endoscopically placed implant that mimics the effect of a gastric bypass. Noting that TMAO levels are linked with the development of diabetes, Dr Raban reported that reduced levels were found in patients who had undergone the Endobarrier procedure.

Mr Michael Glaysher (University Hospital, Southampton) presented a paper looking at the effects of the Endobarrier on lipid profiles and poly-unsaturated fatty acids (PUFA), given that there seemed to be a general improvement in lipid profiles following bariatric surgery, and a normalisation of PUFA levels which offer a cardioprotective effect, though there is also a potential for deficiency given the increased risk of malabsorption. Looking specifically at people with Type 2 Diabetes Mellitus undergoing the Endobarrier procedure, his team had found that after a year their patients had significantly improved lipid profiles in comparison to controls placed on a diet and lifestyle modification programme, though they had reduced Omega 3 and Omega 6 PUFA concentrations, prompting a recommendation for supplementation.

Deterministic antecedents

Professor Carel le Roux (Director of the Medical Medicine Group), gave an ambitious presentation looking at the deterministic antecedents that cause obesity. He presented research on the efficacy of Saxenda (liraglutide – a GLP-1 analogue) as an adjunct to bariatric treatment, arguing that because obesity was really not one disease but multifactorial, that our approaches to

treatment should be multi-tooled, given that patients responded differently to the modalities of treatment available.

Biology vs willpower

The interface between willpower and biology was further explored by Dr Abd A Tahrani (Institute of Metabolism and Systems Research, Birmingham), who argued that weight loss in a Tier 3 service prior to referral for bariatric surgery should not be a pre-requisite for surgery. Interestingly, he posited that weight loss in a Tier 3 service is not predictive of the success of weight loss post-bariatric surgery, and that weight loss after surgery depends more on biology than willpower.

Bariatric surgery in adolescents

The link between the intentionality of the mind, the deterministic neuroendocrinology that underpins it, and its link with our formative years was further alluded to by Professor Torsten Olbers (University of Gothenburg, Sweden), who approached the thorny topic of undertaking bariatric surgery in adolescents. He pointed out that earlier surgery negated the pathophysiological impact of 10+ years of significant obesity that the patient might have to endure should they wait until they were well into adulthood. In a 10 year follow up of patients who had undergone surgery – who were between 13 to 18 years, had a BMI over 40 (or over 35 with a comorbidity), who had failed conservative treatment, and who did not have an insufficiently treated psychiatric disorder, ongoing drug abuse, or a clear pathological cause for obesity – he found resolution of pre-diabetes and T2DM, and improvement in blood pressure. Deficiencies in Vitamin B12, Vitamin D, ferritin and anaemia (amongst others) were common, with the non-compliance of adolescents with supplementation being a particular concern. Striking a sombre note, he reported that whilst there was global improvement in the health of adolescent bariatric patients, psychiatric co-morbidity did not improve.

In all, there was a huge breadth of research discussed from across a host of specialities. With modern clinical practice being so focussed on the multi-disciplinary team, one tends to have some awareness of the practices of other specialities, but a timely reminder of the technical expertise, and challenges faced, by our colleagues in Surgery, Anaesthetics, Endocrinology, Radiology, and the Allied Health Professions proved both humbling and intellectually stimulating.

With thanks to Professor Duff Bruce, Dr Peter Galloway and Dr Kevin Deans.

ACB NI Retirement Celebrations

Grainne Connolly, Belfast Health and Social Care Trust

Medical and scientist colleagues, working and retired, from both sides of the border, gathered together for a Scientific Meeting on the evening of 4th March in the Titanic Hotel, Belfast. The meeting was hosted to celebrate the retirements of two highly esteemed colleagues, Mrs Ellie Duly (Consultant Clinical Scientist, Ulster Hospital, Dundonald) and Dr Janet Chestnutt (Consultant Chemical Pathologist, Antrim Area Hospital).

It was a glorious spring evening and the venue was fitting. The evening sun shone into the cathedral-like space of the historical drawing offices of the former headquarters of Harland and Wolf, builders of the Titanic.

Guests were first entertained to a history and tour of the legendary building, including the offices of key personnel in Harland Wolf at the time the Titanic was built.

The meeting was then opened with a welcome from Dr Elinor Hanna (ACBNI Chair) who also welcomed both speakers, Dr Maurice O'Kane and Dr Tom Trinick.

Calcium: to adjust or not to adjust calcium?

Dr O'Kane gave a comprehensive and stimulating presentation "Calcium: to adjust or not to adjust calcium?".

He introduced the topic with an overview of the calcium pools within blood and factors influencing calcium binding to protein.

He referred to the work of McLean and Hastings, including their biological method for the estimation of calcium ion concentration (*J Biol Chem* 1934; **107:** 337-50) and their original nomogram which was used widely from publication in 1934 until mid-late 1980s.

Dr O'Kane reminded us of the difficulties of measuring ionised calcium in routine clinical practice, including critical dependence on pH, pre-analytical sample handling and cost.

Dr O'Kane explained the many reasons for the plethora of equations published for adjusted calcium with differing slopes and interceptions, including differences in albumin measurement procedures,

Mrs Ellie Duly and Dr Peter Sharpe

Dr Brona Roberts, Dr Pooler Archbold, and Dr Janet Chestnutt

Left to right: Dr Janet Chestnutt, Dr Elinor Hanna, Mrs Ellie Duly

differences in calcium reference intervals (calcium dependent method differences), difference in populations from which equations were derived and regression models used.

He advised that the performance of calcium equations should be assessed by impact on clinical outcome, proportion of patients deemed hypo/normo/hypercalcaemic and by comparison with ionised calcium.

Dr O'Kane summarised results from recent publications that have shown that total calcium often performs better than literature derived equations and locally derived equations perform better than total calcium at lower albumin.

Dr O'Kane concluded that laboratories should derive in house equations, should not use literature-derived equations, may need different equations for different population groups (such as inpatient and outpatient) and should ensure service users are aware of the challenges in calcium measurement.

In a final response to the question posed by his talk, "Calcium: to adjust or not to adjust calcium?", Dr O'Kane concluded "probably – with some caveats!".

Looking backwards and then facing forwards in Clinical Biochemistry"

Dr Tom Trinick followed with an entertaining and fascinating presentation "Looking backwards and then facing forwards in Clinical Biochemistry".

He took the audience on a walk down memory lane with a history of laboratory analysis and images of leading analysers from the past. He reminded the audience of the original purpose, structure and function of NHS Laboratory Medicine and the many differences there were in service delivery, as compared to the present day, such as lack of IT, reduced testing repertoire and restricted on call service.

Dr Trinick followed with an overview of the current approach in Laboratory Medicine with enhanced focus on quality of the complete testing system/process including pre-analytical and

Dr Mike Ryan, Mrs Ellie Duly, and Dr Pooler Archbold

Dr Tom Trinick with Mrs Ellie Duly

Dr Peter Sharpe and Dr Janet Chestnutt

post-analytical, rise of POCT and emphasis on the clinical utility of the test, active seeking of new tests and retiring tests that are redundant. Dr Trinick described the laboratory as the "science resource" of the hospital.

He talked about the future direction of Laboratory Medicine with use of molecular techniques, genetics, personalised screening and medicine. He discussed the future utility of artificial intelligence within medicine and Laboratory Medicine. He described how he envisaged artificial intelligence as the engine driving improvements across the care continuum; how it will be used to change the way futuristic care will be provided and how pathologists will become the first point where clinical decisions will be made.

Dr Trinick also gave a view of the current and future use of artificial intelligence within the Ministry of Defence and the important role the laboratory plays within military medicine, including the use of rapid turnaround panels of test for bio-threat pathogens.

Dr Trinick concluded by reminding the audience of the importance of small gains, inching the way forward and remaining focused on hard definite progress.

Presentation

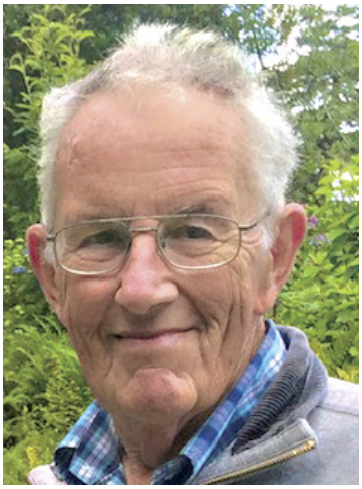
The scientific meeting concluded with a presentation of gifts followed by tributes by Dr Tom Trinick and Dr Kathryn Ryan summarising Ellie and Janet's careers and their extremely valued contributions to the field of biochemistry within Northern Ireland.

An evening of celebration followed. Guests enjoyed a delightful meal, the company of friends, and the opportunity to individually express thanks and best wishes to Janet and Ellie for a long, happy and healthy retirement.

The evening has been made even more special and poignant with the COVID-19 "lockdown" which followed very shortly after. ■

Dr John Stanley Harrop MBBS, MSc, FRCPath

30th October 1944 – 12th June 2020



It was my privilege to work with John from March 1981 until my retirement in August 2005. He had been appointed Consultant Chemical Pathologist to the Derby Hospitals in 1978, following registrar and senior registrar posts in Guildford and Cardiff respectively. During the tenure of those posts, he obtained the Guildford Clinical Biochemistry MSc (with Distinction) in 1975 and MRCPath in 1976.

John was Head of the Chemical Pathology service for over 25 years until he retired in November 2005. Although Derby had 2 separate General Hospitals until just before John's retirement, Pathology across the 2 sites was managed as a single service; he was heavily involved in the planning for the laboratories at the new Royal Derby Hospital on the old Derby City Hospital site.

As well as directing the Department, John held a formidable array of management appointments during his 27 years in Derby, a reflection of his skill in encouraging collaborative working across and within disciplines. He was Chair of the Division of Child Health for 2 years and chaired many hospital committees including the District Medical Committee and the Medical Advisory Committee and was a much-respected Member of the ACB, the Royal College of Pathologists and the wider medical community within Derby. He furthered the profession nationally through his work both as a CPA Inspector and as a member of the UK NEQAS Clinical Chemistry Specialist Advisory group on Immunoassay.

John had very wide interests in Clinical Chemistry, but particularly in the areas of endocrinology, immunoassay, lipids and IT. His knowledge and observations of both the analytical and clinical aspects led to publications and posters advancing the understanding of thyroid and parathyroid disease and to the use of computer-generated comments to aid the interpretation of lipid reports. He maintained strong links with Consultants within the hospitals and with local General Practitioners and was a source of invaluable advice.

Above all these achievements, John was an empathetic, genial, humorous and supportive colleague to everyone within the Department. The service he led was of high quality and the atmosphere he created made it a good place to work. I know that I speak for all his former colleagues in saying that it was a pleasure to have known John.

During his retirement, John made weekly visits to a local care home 'Horsfall House' to chat to the residents about sporting memories, especially those with dementia, for it brought much joy. He also was heavily involved with the local PPG (Patient Participation Group), starting off as a member, then progressing to being the Chairman of the group. His other interests included gardening and membership of the local walking group.

John was very proud of his grandchildren, Holly aged 15 and Olivia aged 12.

We offer our sincere condolences to his wife Sue, and to their daughters Alison and Jacqueline at this sad time. ■

Dr Peter Hill

Industry Insights: August 2020

Doris-Ann Williams, Chief Executive, BIVDA

Both busy and frustrating times currently at BIVDA! We are so desperate to really get our teeth into activities and while thankful for the plethora of virtual platforms that keep us all in touch, they don't really replace old fashioned face to face discussion. There are some interesting articles in the *Wall Street Journal* on the etiquette and psychology of 'zoom' meetings for those interested.

While the COVID-19 pandemic continues and testing remains high profile, we now have to face Brexit once again on our agenda. We will be planning webinars and news updates on a regular basis for our members during the Autumn but I feel like just as the skies were clearing we have another very large black cloud on our horizon. I had intended to focus this piece on the IVD Regulation which comes fully into force on 26th May 2022, but with everything else going on I feel we need to look at more than one topic.

However, the IVD Regulation is going to be hugely significant and the biggest threat to you, as our end users, is the possibility of tests disappearing from your suppliers. The additional financial and resource burdens this regulation requires means that some established tests may become uneconomical to continue and/or the evidence base to allow older products to meet their new risk classification may not be achievable. As a reminder, all products will be re-classified under a new rules based system according to their risk related to the health of individuals, the population or at the highest level (Class D) both individuals and the population. Very few products will be

self-certified as they were under the IVD Directive becoming Class A (mainly instrumentation and sample collection devices). In some circumstances, for example tests for syphilis, they will 'jump' from being low risk to highest risk. In total around 90% of all IVDs will be re-classified into Classes B, C or D. So the take home message is to start a dialogue now, so both sides will have chance to adjust before the deadline.

On a more positive note, many companies have seen the same effect you have on testing demand during the pandemic and there are now a number of initiatives to re-start the NHS and ensure people with other diseases and infections start to have tests to enable diagnosis and treatment, including a project being run between the Health Foundation and the AHSN Network. At the end of July the Proprietary Association of Great Britain (the equivalent to BIVDA for over-the-counter medicines and devices) ran a survey of

public opinion which has produced some interesting results and which is available from their website (**www.pagb.co.uk**) with snippets below:

The headline figures show that the coronavirus pandemic has made people think about self-care and how they use NHS services:

- Almost one in three people say they will use the NHS differently following the coronavirus pandemic.
- Among those who previously considered A&E as an acceptable route to access care for generally self-treatable conditions, 71% said it was less likely to be their first option after the coronavirus pandemic.
- Among those who previously sought a GP appointment as their first option, 51% said they were less likely to do so after the pandemic.
- 77% agreed the pandemic should change the way we think about using GP appointments and A&E services.
- 86% agreed that A&E and GP appointments should be used only when absolutely essential – up from 81% in PAGB's 2016 survey of attitudes to self-care.

Comments from respondents included: *"Now I think twice if it is essential for me to see a GP or go to A&E"*; *"I do much more self-care than before coronavirus"*; and: *"I'll trust pharmacy advice more in the future"*.

I think we are in for some interesting new approaches as we move forward and I hope these include continuing to adopt technology at pace! ■

Publication Deadlines

To guarantee publication, please submit your article by the 1st of the preceding month (i.e. 1st September for October 2020 issue) to:

editor.acbnews@acb.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 Ian Hanning, Lead Editor, via the above e-mail. ■

Association for Clinical Biochemistry & Laboratory Medicine

Council Nomination Form

Election of Officers / Council Member 2020

We, the undersigned, being Members of the Association nominate

Name .....

Address .....

.....

.....

For election as National Member of Council*

Name 1. ....
Capitals Signature

Name 2. ....
Capitals Signature

Name 3. ....
Capitals Signature

I am willing to undertake the duties and responsibilities of this office if elected.

....
Signature Date

*Please note only Ordinary and Honorary Members of the ACB may be nominated for the position of National Member of Council.

If there are more nominees than vacancies for these positions, a ballot will be held with all voting members (see Bye-Laws of the ACB items 2 & 3 and 8).

This form, duly countersigned, to be returned to:
The Administrative Office
Association for Clinical Biochemistry & Laboratory Medicine
130-132 Tooley Street, London SE1 2TU
before 5pm BST 4th September 2020.

ACB News Crossword

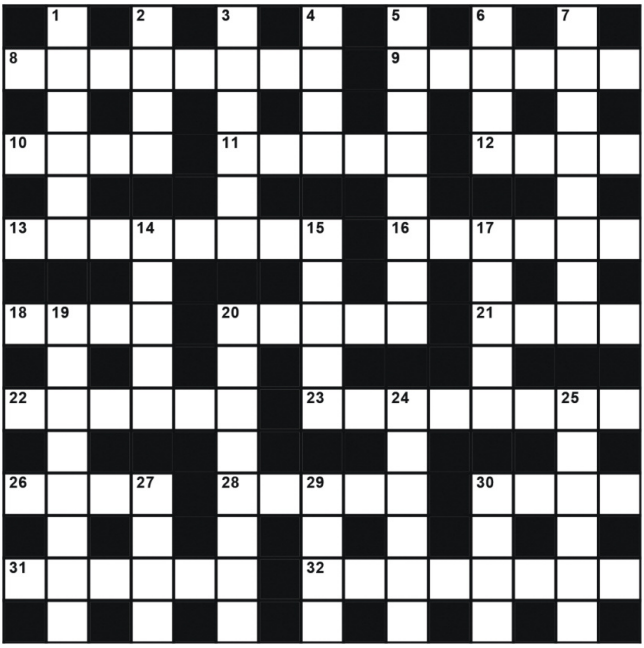
Set by Rugosa

Across

8 Complained about initial chemical list lacking a neurotransmitter (8)
9 Reprimand: science difficult to understand (6)
10 Copies some tapestries (4)
11 Inactive internist isn't completely out (5)
12 Present a biased view of revolution (4)
13 Proscribed entrance, very French, written permission required (8)
16 Parliamentary leader abandons promise about new structure with corresponding constituents (6)
18 Make better preserve (4)
20 A salt made ship-shape book of maps (5)
21 Church recess more than half elapsed (4)
22 Protein reagent manuscript rejected – resubmit after revision (6)
23 Life-saving treatment is sadly beginning in confusion (8)
26 Infamous centre for operations (4)
28 Finale from Church of England organ (5)
30 Supports an initial complaint (4)
31 Unhappily, the first opposition victory is in sight (6)
32 NICE holds review into cause of addiction (8)

Down

1 New space probe has no 26 metal (6)
2 Retest not needed – smear tests reveal tumour (4)
3 Dioxide plasticises mixture, omitting unnecessary steps (6)
4 Information elucidating initial cell structure (4)
5 Inaccurate pointers to essential components of life (8)
6 Performs masquerades (4)
7 Hands over mixture of books in French (8)
14 Bad managers nag away, denigrate (5)
15 Crushed soil could end very hard (5)
17 Gland with many components: none differ? (5)
19 We hear you are in charge of current identification of stone constituent (4,4)
20 Agents in trouble about stimulating foreign substances (8)
24 Use simple increases, cut out compound (6)
25 Disinfectant element of redesigned new edition went off (6)
27 Correct poor diet (4)
29 Each of PG Wodehouse's was a bit daunting (4)
30 Informal conversation about a hormone (4)



Solution for June Crossword