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International Federation of Clinical Chemistry and Laboratory Medicine





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IFCC and AFCC sign a Memorandum of Understanding with ASLM aimed to strengthening and improving the quality of laboratory medicine in Africa

by Howard Morris
IFCC President

The African Federation of Clinical Chemistry (AFCC) and the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) have formalised a new partnership with the African Society for Laboratory Medicine (ASLM). On 17 March 2018, Dr. Ali Elbireer, Chief Executive Officer of ASLM, met with Prof. Howard Morris, President of IFCC, and Prof. Rajiv Erasmus, President of AFCC, at the ASLM headquarters office in Addis Ababa, Ethiopia, and subsequently signed a Memorandum of Understanding (MOU) to work together on specific collaborative projects aimed at strengthening and improving the quality of laboratory medicine in Africa.

“The ASLM has developed and lead an excellent programme to assist clinical laboratories across Africa work towards accreditation in an innovative step-wise manner. At each step these laboratories improve the quality of their procedures to improve health outcomes for their communities. The IFCC is proud to work in collaboration with ASLM to extend this improvement in quality clinical laboratory practice” Professor Howard Morris, President of IFCC stated on the importance of this MOU. AFCC President Professor Rajiv Erasmus stated *“This is a unique opportunity for the 3 organizations to come together and use their strengths to further advance the practice of laboratory medicine and strengthen the laboratory-clinical interface on the African continent”*. He emphasized the need for collaboration between these organizations.

“Over the course of its history, the IFCC has made outstanding contributions to the fields of clinical chemistry and laboratory medicine in Africa,” said Dr. Elbireer after the meeting. *“ASLM is delighted to work with IFCC and AFCC to continue advancing the field of laboratory medicine in Africa and worldwide.”*

The organizations plan to initiate specific collaborative projects within the next year. Projects will encompass support for continuing education and training programmes for medical technologists and laboratory

scientists and management training for laboratory directors, as well as training and preparation of laboratories for accreditation. This will be done, in part, through support of distance learning programmes and clinical and scientific conferences in Africa, and the development and promotion of national reference laboratories. In addition, the organisations will work together to promote the value of laboratory medicine in Africa as a means to improve the recognition of clinical laboratories improving clinical outcomes across the continent.

One major focus will be on proficiency testing. ASLM, IFCC and AFCC will further collaborate with the diagnostics industry to establish proficiency testing programmes and ensure the availability of quality laboratory medicine diagnostics in Africa.

“A first priority will be continuing and expanding the external quality assessment programmes for clinical chemistry in Zambia, with the hope that success there provides a format to be expanded across other African nations,” said Prof. Morris. *“Over the longer term, the focus will be on ensuring the sustainability of proficiency testing and external quality assurance programmes.”*



L-R: Prof. Howard Morris, IFCC President; Prof. Rajiv Erasmus, AFCC President; Dr. Ali Elbireer, ASLM Chief Executive

The new IFCC Committee on Clinical Applications of Cardiac Bio-Markers (CB) plans its activities for 2018

by Fred Apple
Chair, IFCC C-CB

After one year as Chair of the Task Force (TF) on Clinical Applications of Cardiac Bio-Markers (CB), effective from 1 January 2018, the TF was newly designated as the Committee on Clinical Applications of Cardiac Bio-Markers (C-CB) under the supervision of the new Education and Management Division. Along with the diverse and talented committee members, consultants and corporate partners, the C-CB has been very busy. Please visit our website: <http://www.ifcc.org/ifcc-education-division/emd-committees/task-force-on-clinical-applications-of-cardiac-bio-markers-tf-cb/>.

Our primary activity has been, from the start, to develop educational materials for:

- a) high-sensitivity, contemporary and point of care cardiac troponin assays; and
- b) natriuretic peptide assays used in clinical practice. We have been successful in distributing over 5000 posters and mouse pads based on the initial TF-CB educational documents.

OUR GOALS FOR 2018 ARE AS FOLLOWS:

Firstly, to develop publishable laboratory medicine, interdisciplinary, expert opinion materials and papers, as well as present global workshops in collaboration with industry, clinical societies and other IFCC committees. Our recent collaborative 'Special Report' paper with the AACC Academy: Wu AHB, Christenson RH, Greene DN, Jaffe AS, Kavsak PA, Ordonez-Llanos J, Apple FS. Clinical Laboratory Practice Recommendations for the Use of Cardiac Troponin in Acute Coronary Syndrome: Expert Opinion from the Academy of the American Association for Clinical Chemistry and the Task Force on Clinical Applications of Cardiac Bio-Markers of the International



Our group, from our last meeting on 7 April 2018 in Boston

Federation of Clinical Chemistry and Laboratory Medicine. Clin Chem 2018; 64:, 645-655, was an excellent start to the new year.

Secondly, we will continue to update and post educational tables on the IFCC website addressing cardiac troponin assay and natriuretic peptide assays based on manufacturer claims and peer-reviewed literature. Our most recent posting addresses interference tables for biotin and haemoglobin on cardiac troponin and natriuretic peptide assays.

Thirdly, we have started organizing materials for developing an 'APP' for cardiac troponin and natriuretic peptide assays and their role in clinical decision making for both laboratorians and clinicians.

Fourthly, we have designed a 'Clinical Scorecard Study' pertaining to hs-cTn assays based on optimizing ruling

out myocardial infarction and we hope to have preliminary data completed this summer.

Fifth and finally, in partnership with our corporate colleagues, a first, joint-industry sponsored 'cardiac biomarkers' workshop will be held at the Chicago AACC meeting on August 1, 2018.

On behalf of the C-CB, I thank the IFCC office for their ongoing support as well as the generous financial support of our corporate partners.

*Fred Apple, PhD, Chair C-CB
Hennepin County Medical Center
Professor, Laboratory Medicine and Pathology
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School of Medicine Clinical Labs P4
Minneapolis MN, US*

IFCC welcomes a new corporate member: Timedico AS

TEMPUS600®

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Timedico A/S is a leading global developer of safe and reliable transportation systems for small clinical samples. Timedico is committed to the development, manufacturing and marketing of the patented invention TEMPUS600® - the internal transportation system designed for transferring small clinical samples in hospitals and related businesses. The system is fast, safe and dedicated. By enabling one-touch handling and point-to-point delivery it provides a crucial reduction of the total turn-around time and improves the treatment of the patients and the efficiency of the hospitals.

News from the IFCC Website



JCTLM Newsletter for 2018 is now available

JCTLM is pleased to announce the publication of its 2018 Newsletter. Accompanying the distribution of the Newsletter is a special report on the Commutability of Certified Reference Materials, written by Greg Miller and Neil Greenberg.

This special report will be described in more detail in the next News Update.

[Read more](#)



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C-VPLM: changing the agenda from cost to value

The background to the formation of the IFCC-WASPaLM Committee for the Value Proposition in Laboratory Medicine

by Andrew St John
Chair, IFCC C-VPLM
ARC Consulting, Australia



Andrew St John

For many years laboratory professionals proudly made the claim that the value of laboratory medicine was demonstrated by the fact that 70% of clinical decisions depended upon the lab. In recent years we have realised that this claim has very little foundation and we need to generate and promote more substantive measures of value. The case for a need to move from a focus on the costs of testing to one which is more value based was documented by the IFCC Task Force on the Impact of Laboratory Medicine on Clinical Management and Outcomes and is now widely acknowledged throughout the profession and industry.

In order to reflect this new awareness of the importance of value, various groups within laboratory medicine are developing specific initiatives that are aimed at changing practice in ways that will generate better value for patients and for the community at large. These groups include the Test Evaluation Working Group of the European Federation of Laboratory Medicine (<https://www.eflm.eu/site/page/a/1158>) and the US-based group Society to Improve Diagnosis in Medicine (<http://www.improvediagnosis.org/page/Diagnosis>).

A third and somewhat different approach to determine value has just been formalised into the IFCC-WASPaLM Committee for the Value Proposition in Laboratory Medicine (VPLM). It aims to address the problem that even when we have tests accompanied by a substantial evidence base to support their effectiveness, experience shows that this evidence often does not always translate into routine practice. In other words there are serious problems with the implementation of new tests, a problem which exists in healthcare generally.

The value proposition concept has been borrowed from business and can be defined simply as a “*statement that describes the benefits of a service, to whom, and how the benefits can be delivered*”. Translating that to laboratory medicine and the use of a particular test, means that we must define the care pathway where the test will be used, document the evidence, and measure the impact and outcomes on all the stakeholders including patients. In work completed to date we have described a theoretical framework which lists all the key components of the value proposition that need to be determined for a test to be clinical and economically effective. The most recent publication describes the application of the value proposition to the implementation of high sensitive troponin testing.

The VPLM Committee will be working on extending the value proposition to several different tests and evaluating the concept in laboratory sites. Another key task will be to assess the relevance and applicability of the concept in different health care systems where funding systems will vary, and value may be quantified differently. The international composition of the Committee will facilitate such work, as also will the involvement of members from the profession and industry. Further details on the composition and terms of reference for the Committee can be found at: <http://www.ifcc.org/ifcc-education-division/emd-committees/c-vplm/>.

DQCML visit to Malawi – a field report

*by Egon Amann
Chair, DQCML*

INTRODUCTION

The Malawi Association of Medical Laboratory Scientists (MAMLS) became a Full Member of IFCC during 2015. Shortly after joining IFCC, MAMLS expressed a wish for support from IFCC to help develop the quality of laboratory medicine in Malawi.

A scoping visit by Graham Beastall took place in 2016, in which particular needs were identified and specified in a detailed report.

In November 2017, after additional discussions at the occasion of the IFCC WORLDLAB Conference in Durban in October 2017 with the people concerned, MAMLS issued a request for an IFCC DQCML workshop in Malawi.

Two major topics were listed in this application:

- Training of Medical laboratory professionals on quality process and practice.
- Helping the society plan and strategize on how to execute an EQA pilot project in Malawi.

The application was approved by the EMD Executive Committee and DQCML started to prepare the visit and assessed how best IFCC may assist MAMLS.

The programme for the visit was discussed in advance with the following MAMLS' members, who were our hosts and extremely helpful and open in the preparation and execution of this visit: Victor Makwinja, MAMLS Interim President, Elias Chipofya, National Representative, Humphries Malata, Training and Education Technical Advisor to MAMLS council, and Wakisa Kipandula, MAMLS project coordinator.

THE WORKSHOPS

The visit to Malawi took place from 26 February to 1 March 2018. The visiting team consisted of Egon Amann, Graham Beastall, and Annette Thomas, each of whom covered special topics for two (identical) workshops held in Blantyre at the College of Medicine (Day 1) and Lilongwe, Malawi's capital, at the Kamuzu College of Nursing, part of the Medical Department (Day 3).

Day 1 and Day 3 were devoted for presentations and workshops, divided into three sessions, including lectures on QC and EQA and a "Lessons Learnt" presentation given by Ronald Khunga who completed an IFCC-funded PMEP at the EQA scheme run by neighboring Zimbabwe (ZINQAP).



Participants at the College of Medicine, Blantyre, 26 February 2018

An example for the results developed by the Blantyre workshop

Group 1	Group 2	Group 3	Group 4
Quality monitoring inadequate	Insufficient inventory management	Internal quality control not always correctly applied	Knowledge gap from policy makers to labs workers
Too intensive Governmental control of labs	Documentation and document control	EQA materials supply logistics inadequate	Insufficient supply of reagents and QC
Missing freedom to act	Equipment maintenance not done properly	Trained staff have high workload and must do everything	Too ambitious government body plans – reality miss
Even National Labs not being accredited	EQA National labs: not trustworthy	No CAPA system in place	No real interest and push for EQA from government
Insufficient training of personnel	-	Missing instrument maintenance & servicing	Bad commitment from lab staff / no reward system

For the interactive workshop “*What is the best strategy to achieve compliance with QMS and QC requirements in the clinical laboratory?*” the participants (38 in Blantyre and 16 in Lilongwe) were divided into groups to discuss and articulate the most burning issues of clinical laboratories in Malawi.

THE LABORATORY VISIT TOUR

On Day 2, five public sector District Hospitals (Zomba, Machinga, Balaka, Ntcheu, and Dedza) were visited along the way from Blantyre to Lilongwe (The “*Laboratory Visit Tour*”), which allowed the visitors a deep and detailed insight into daily routines, practices and issues of these rural, hospital-associated clinical laboratories.

We were welcomed in all laboratories and shown around. Questions were openly answered. Instead of describing the impressions of each laboratory separately, a selection of common themes (examples) and situations are summarized:

- Laboratories are very small in size, variety and number of assays and endowment.
- Personnel number is small and varies between 5-8 staff.
- Laboratories primarily serve the hospital's

in-patients, and also (in smaller percentages) out-patients.

- Phlebotomy areas were very small and not always in good shape and hygienic standards.
- No laboratory displayed a fully developed LIMS system.
- Some labs used a four-digit system to assign and identify patients' samples.
- Most labs just used the patient's name as ID.
- Instrument maintenance and servicing is poor: we saw often signs reading “*Out of order since...*”
- Blood-group matching (in transfusion medicine) could often not be done, because fridges and freezers were not in operation.
- The labs often experience power outages. Few have generators, and in case they have, diesel may not be available.
- Some labs have large battery packs, which allow to bridge power outages for instruments affected for approximately four hours.
- Tests of major public health importance are: Malaria, HIV, and TB. The three-major test (some of which are POC tests / Test strips) are sponsored by international organizations such as US Aid, the

Bill Gates foundation, the CDC, amongst others. For those tests, some labs employ EQA schemes.

- Only one Lab performed blood glucose tests (by POCT).
- No glomerular filtration rates are measured.
- Often QC/EQA could not be done since QC materials did not arrive on time.

VISIT SUMMARY

This visit of IFCC officers by request of MAMLS was extremely useful. MAMLS expressed their thanks and explained that the two workshops have raised their attention towards improved IQC and, even more importantly, towards implementing EQA schemes for all tests being performed in Malawi.

So far, EQA is done by the National EQA institute only for Malaria, HIV and TB. MAMLS should intensify their activities to the Ministry of Health towards country-wide, general EQA schemes. In brief, such activities should include, but are not limited to the following strategic plan:

- Develop an EQA establishment work place.

- Establish an EQA technical Working Group.
- Inform (and involve where necessary and appropriate) all labs and MAMLS members accordingly.
- Raise attention to the EQA schemes by workshops or seminars.
- MAMLS must influence the education curriculum by highlighting the meaning of IQC and EQA.
- MAMLS should influence the education curriculum by raising attention to risk management tool, e.g. FMEA.
- MAMLS should develop programs to enable labs to “move up the Quality ladder” by applying SLIPTA, SLMTA schemes.
- The final goal must be to achieve accreditation according to ISO 15189.

The IFCC visitors would like to express their thanks to MAMLS for this invitation to come to Malawi. We wish you all the best in working towards (and reaching) these ambitious goals in the medium term.



L-R: Next to Annette Thomas is Ronald Khunga (Laboratory Manager for Thyolo District Hospital Lab), Alice Kamwamba (Lab Manager for Ntcheu District Hospital Lab), Symon Naype (Laboratory Manager for College of Medicine Pvt Clinic) and lastly, Daniel Lawadi Banda (Senior Lecturer in Medical Microbiology, College of Medicine, University of Malawi). Graham Beastall, IFCC past President, Egon Amann, DQCML Chair, complete the group.

ACBICON in Lucknow (IN) at the crossroads of innovation – a VLP Report

by Bernard Gouget

IFCC-Abbott Visiting Lecturer in India

SFBC, International Committee

Chair, Human Health Care Committee on Accreditation - COFRAC

Chair, IFCC Nominations Committee (2016-2017)

General Secretary of the International Francophone Federation of Clinical Biology and Laboratory Medicine (FIFBCML)

It was an adventure to reach India to attend the ACBICON 2017 meeting after a long journey stopping in Delhi airport in-between, currently the world's number 2 airport of the highest category. It is a gateway with a mini-smart city.

I rested in a comfortable hotel for one night before reaching the final destination. India has always been home to a wealth of cultural, social, and ethnic diversity across its 1.350 billion people. Its 29 states and seven union territories – many of which have populations larger than countries – vary widely in terms of their ecology, economy, and demography, all of which impact health outcomes. Uttar Pradesh, India's largest state, with a population of more than 204 millions, has among the lowest per-capita incomes in the country. Infant and child mortality rates are especially high. Uttar Pradesh is also known as UP and it is the most densely populated state in India. The state was created since 1 April 1937 as the United Provinces and was later renamed as Uttar Pradesh in 1950. Lucknow is the capital city and home to the largest number of Hindu and Muslim people.

For the first time in the history of its existence, the national conference of the Association of Clinical Biochemists in India (ACBI) was organized by the department of biochemistry, King George's Medical University, in Lucknow. A three-day conference was attended by more than 150 very well-known scientists from India and abroad and by 800 delegates from all around India to learn more about "Emerging trends in Clinical Biochemistry: from Evidence based Medicine to Molecular Medicine".

The 44th conference was hosted at the King George's University Convention Centre and inaugurated by



Prof. Abbas Ali Mahdi and Dr. Bernard Gouget

Prof. MLB Bhatt, Honorable Vice Chancellor, King George's Medical University. Prof. M. Ferrari, IFCC President, Prof. H. Morris, IFCC President elect, Dr. G. Zubieta-Calleja (BO) together with Prof. Poornima A. Manjrekar, KMC, Mangalore, President ACBI, Prof. Rajeev R Sinha, General Secretary ACBI, Prof. A.A. Mahdi, Organizing secretary ACBICON 2017, Dr. Shivani PANDEY and Dr. Dilutpal SHARMA, joint organizing secretaries ACBICON 2017 took part in the opening ceremony.

As in each year, with pleasure I met Indian friends thousands of kilometres away from my home. Special thanks for their friendship to Prof. Praveen Sharma, Prof. T Malati, Prof. J Bhattacharjee, Prof. S.P. Dandekar, Prof. KP Sinha and many others. I am personally very happy to see that Dr. Pradeep K Dabla is so successful

Article continued on next page

with the IFCC-YS as he always very busy at the conference with the YS session on “Leadership Skills: essential for career and organization”. I wish also thank ABBOTT for the IFCC-VLP support.

Arriving one day in advance, I had the privilege to be invited to join the ACBI-EB members at the private home of Prof. Abbas Ali Mahdi who took over as new ACBI President during the inaugural function as successor of Dr. Poormina A Manjrekar. The dinner reflected the lip-smacking royal cuisine, a real foodies’ paradise influenced by the Mughal touch!

The scientific program reflected several current and emerging topics on: Vitamin D, neurological, cardiovascular, respiratory, kidney diseases; role of nutritional factor in health and disease, reproductive biology, natural products and nutraceuticals, life style diseases, molecular medicine, metabolic disorders, biomarkers, environmental health/metal toxicity, epigenetics, chrono-medicine, nanomedicine, cancer biology.

According to Prof. Praveen Sharma the conference was graced by luminaries in the field of Laboratory medicine that would provide enormous opportunities for interaction among faculties, researchers, students and clinicians. The first IFCC session was held on Monday where Prof. H Morris described the role of Vitamin D and molecular actions across a variety of biological systems; followed by Prof. T Ozben who delivered her talk on Potential risk Predictors for cardiovascular diseases and Dr. B. Gouget discussing emerging trends in quality management. It is clear that the laboratory services are currently at the centre of attention regarding quality due to the wide ranging impact on patient care.

The second IFCC session on Tuesday started with Prof. H Morris speaking on standardization and harmonization, Prof. T Ozben on Liquid biopsy as novel diagnostic and prognostic biomarker and myself with a presentation focusing on the investigation of the cyber security paradigm and e-health. Indian government is encouraging a pluralistic approach in health care. So, the Union Health Ministry has already launched over a dozen mobile apps that were meant for prevention and control of diseases such as diabetes and dengue. Telemedicine facility seemed

to be undergoing a transient phase. While mobile applications have already done their bit in urban areas, digital initiatives are planned to be deployed to the farthest corners of the country.

After the academic sessions, the students invited me to visit the university, the IVD exhibition and to discover the city of Nawabs along the bank of river Gomti. We visited the Bara Imambara built in 1784, the mysterious maze called Bhul Bhulaiya and we had a glimpse on the Husainabad Clock tower, the Rumi Gate and the Residency.

The conference was also an opportunity for the exchanging of points of view and experiences between ACBI, APFCB and IFCC in a friendly and professional atmosphere. The IFCC delegation was invited to the APFCB 2019 COC meeting. Prof. M. Ferrari, IFCC President, Prof. Abbas Ali Mahdi, ACBI President and Prof. Praveen Sharma, APFCB 2019 President have pledged to work together for the next Asian pacific federation congress.” The participation of IFCC at APFCB 2019 is aimed to strengthening the bilateral scientific dimension of our engagement inside the international federation” said Prof. Praveen Sharma.

Prof. Abbas Ali Madhi, ACBI President, expressed also his desire to make his country “*the best partner in the IFCC world*”. Prof. Howard Morris said “*I think we have a very good chemistry, we want to see India as one of the foremost partners in IFCC*”.

The two great federations have a historic relationship, reinforced by the presence of the APFCB representative at the IFCC EB 2018-2020. Both sides will continue to enhance and to cooperate on issues of concern such as education, science and technology cooperation, innovation in lab medicine related sectors and youth exchanges. “*Deepening the partnership between India and IFCC is one of the most important and comprehensive bilateral engagements marked by intense and frequent high-level exchanges and deep cultural and scientific understanding*” Prof. Praveen Sharma commented, before formally inviting all IFCC members to the 2019 APFCB Congress (17-20 Nov 2019) in Jaipur, a modern city with an old world charm. Originally, the city of kings and royal family, this ancient city now gained prominence worldwide as an important IT and medical tourism hub.

Clinical Chemistry Trainee Council: Question Bank



by **Nader Rifai**
Founder of CCTC programme
Ann Gronowski
Co-Chair, CCTC programme

This is the third in a series of articles regarding the *Clinical Chemistry* Trainee Council (CCTC), a free multi-lingual online educational program for laboratory medicine trainees and their mentors (www.traineecouncil.org).

The primary goal of this series is to bring the CCTC to the attention of a broad sector of laboratory medicine professionals from around the world. Currently, ~12,000 registrants, from 156 countries, are using and benefiting from this program. Approximately 40% of CCTC users are from emerging and developing countries.

As we presented earlier, the CCTC website contains a wealth of educational materials including a Question Bank. The CCTC Question Bank is a compilation of multiple choice and Royal College of Pathology-United Kingdom (RCPATH) type of questions; the latter is in an essay format with multiple probing questions.

The questions were derived from multiple sources including:

- American Association for Clinical Chemistry
- College of American Pathologists
- American Society for Clinical Pathology
- Association of Clinical Biochemists-UK
- Personal collections [Carey-Ann Burnham and Christopher Doern (microbiology), Ronald Jackups and William Lane (transfusion medicine), Allan Deacon (biochemical calculations), and Roy Peake (RCPATH)]
- Internally developed by more than 100 laboratory medicine professionals

All contributed questions were evaluated for correctness and relevance by various groups of specialists and peer-reviewed.

At the present time there are ~2500 questions in use and we anticipate the addition of ~600 molecular diagnostic questions by the end of 2018 (Table 1).

The Question Bank can be accessed via the CCTC website on a desktop computer or a mobile device.

Questions are grouped into courses and each course is ranked in the order of difficulty as easy, intermediate or advanced (Figure 1).

Upon completion of a course, a certificate can be sent to the user and/or mentor; it is an effective means for individuals to assess their level of competence and monitor their progress.

The availability of the Question Bank on mobile devices such as a smartphone or tablet, facilitates its utility

Table 1 Types and Numbers of Questions in the Various Disciplines

Multiple Choice Questions	
Clinical Chemistry & Immunology	740
Hematology & Coagulation	370
Microbiology	390
Transfusion Medicine	190
Molecular Diagnostics (available at the end of 2018)	600
Other	180
RCPATH Questions (Essays with multiple questions)	
Clinical Chemistry	624

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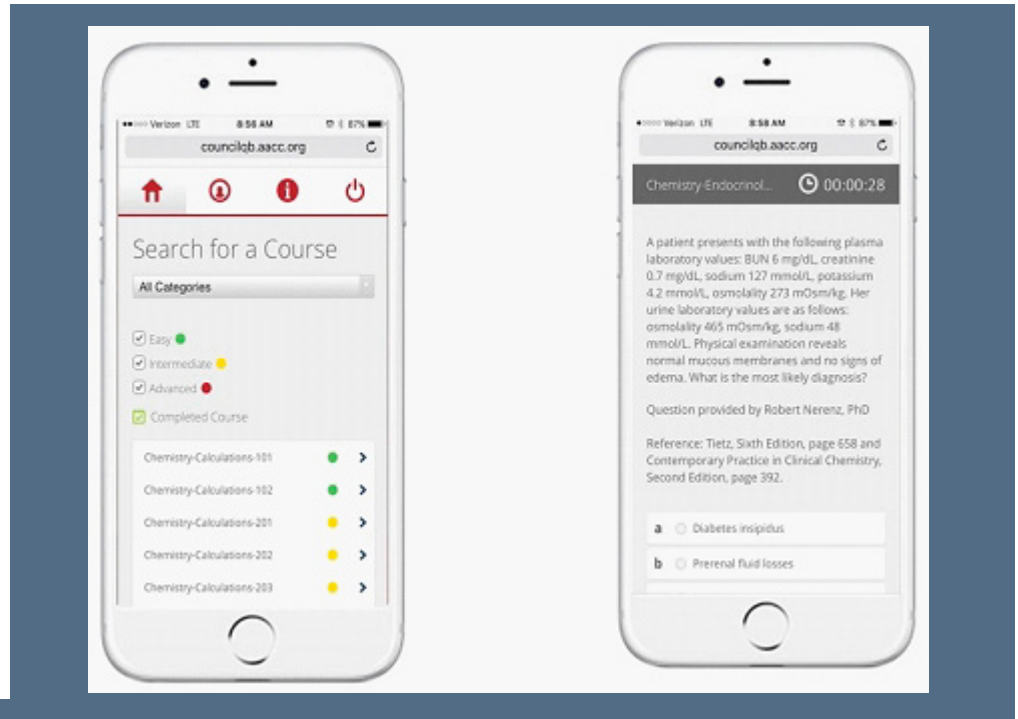
and enables learning on the go. Unlike other materials in the CCTC, however, the Question Bank is only available in English.

We encourage all trainees in laboratory medicine and their mentors to take advantage of this free resource and to register to gain access to these materials by going to the following website:

www.traineecouncil.org.

It takes less than a minute!

Do enjoy the CTCC Question Bank.



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Harnessing M-Health to improve diabetes management

by Bernard Gouget

Counselor for Public Health FHF

Chair, Human Health Care Committee - COFRAC

Chair, IFCC Nominations Committee (2016-2017)

General Secretary of the International Francophone Federation of Clinical Biology and Laboratory Medicine (FIFBCML)



Bernard Gouget

Currently 415 million people in the world are affected by diabetes. This figure will increase to 642 million people by 2040 if nothing changes. Type 2 diabetes represents 90% of the diabetes encountered worldwide, or around 372 million people. 12% of global health costs concern diabetes. While these figures are impressive, many pre-diabetics are not even necessarily screened. Among the chronic diseases that are currently at the heart of health concerns, diabetes is at the head of the list.

Mobile Health, defined by WHO as “medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices” offers

new possibilities to improve monitoring of chronic diseases and permit patients to take a more active role in their management. It can also contribute to the development of the predictive and preventative dimension of medicine via patients who are experts in their disease and ultra-connected.

As shown by a study of the Fédération Française des Diabétiques (French Federation of Diabetics), 80% of diabetics are currently equipped with smartphones and tablets. While 25-34-year olds own most of them (63%), those above age 80 are not left behind. Twenty percent of them have both a tablet and a smartphone. Among this 80%, half of patients have already downloaded a mobile health application. This is an impressive result if it is compared to that for all chronic diseases, which drops to 15%. Diabetics do not just download these applications. They use them! More than half of diabetics estimate today that these applications are vital for managing their disease.

Efforts by clinicians and laboratory medicine specialists are still ongoing to better understand the applications because only two out of 10 diabetics in France have a connected device. The connected blood glucose meter is the most popular. In diabetology, mobile health is already a reality. Many objects are forthcoming,

such as the graphene and gold patch, a very strong and flexible sensor that is positioned on the skin for continuous monitoring of blood glucose levels. Google and Novartis are working on contact lenses using tears to measure blood glucose.

We can also mention the artificial pancreas, comprised of a blood glucose sensor that sends data to a terminal that contains a complex algorithm in order to determine the best insulin dose to send to the connected pump. Data are sent at the same time to a monitoring service in order to improve long-term treatment.

Many applications can be found in the Apple or Google Play Store. There are solutions to connect the blood glucose meter to your smartphone to send blood glucose values to the cloud. The data are then organized, prioritized and interpreted by healthcare professionals or patients themselves. Electronic blood glucose logbooks and rapid decision support systems are available to adjust the insulin dose. Connected digital scales, tensiometers, physical activity sensors, and nutritional programs complete the range.

Mixed telehealth type systems now encompass automated exchanges between a connected device

Article continued on next page

and the patient, with telemonitoring by a telemedicine nurse, medical biologist and/or a physician. In terms of prevention, screening, and management, it is clearly "Medicine 3.0". Medical knowledge held by the entire human community is shared among its members via the Internet, especially the web applied to health, and all the new cutting-edge technologies, including telemedicine. In diabetes, m-Health does not substitute for the human relationship between the healthcare professional and the patient, but improves and simplifies the management of diabetic patients, allowing them to live in an optimal and independent manner. The more reliable, more systemic monitoring of diabetes parameters through m-Health is essential for more appropriate interventions by the healthcare professional.

Large companies, such as Novo Nordisk and Eli Lilly, are making investments for rapid innovation. Google, an expert in Big Data, and Sanofi, which has the know-how in the field of medical treatment and devices,

have already cemented their alliance via Onduo, a virtual clinic helping people with diabetes to live a fuller and healthier life by developing global solutions that combine devices, software, drugs, and professional healthcare to permit simple and smart management of the disease. Only a few sizeable pharmaceutical companies have not yet integrated Alphabet (Google) into their strategy.

Laboratory Medicine has become systemic, while conventional technology and the digital world have combined to generate interdisciplinary progress that revolutionizes healthcare. Faced with these trajectories, active reflection on m-Health and bio-engineering becomes indispensable within the IFCC to anticipate the scientific, technical, and human disruption. New collaborations need to be established, not only with the GAFAM Big 5 giants, but also with the pharmaceutical, biomedical device, and IT industries, to address the new challenges and possibilities of digital health.

NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES



News from the Spanish Society of Laboratory Medicine

New Strategic Plan of the Spanish Society of Laboratory Medicine

In its new Strategic Plan (2018-2020) the SEQC^{ML} proposes technological innovation and quality in the laboratory as keys to improving clinical decisions

- The SEQC^{ML} Strategic Plan 2018-2020 seeks to improve the visibility of Laboratory Medicine
- The Society will enhance the scientific quality of its publications, with the goal of having its Magazine indexed
- Free membership fees for new members will be introduced during their period of medical residency to encourage generational change

Madrid, 15 March 2018 - The Spanish Society of Laboratory Medicine (SEQC^{ML}) has prepared a new Strategic Plan for the next three years with which it seeks to give visibility to Laboratory Medicine and place it at the centre of clinical activity. To this end, SEQC^{ML} is committed to quality in scientific production and technological innovation to strengthen the advisory role of laboratory professionals and contribute to improving clinical decisions.

“70% of clinical decisions are based on diagnostic tests,” says Dr. Imma Caballé, president of the SEQC^{ML}, who argues that “it is time to recognize the value” of those who are behind these tests. “We are knowledge managers and expert clinical consultants and we must assume a position of shared leadership”, maintains the president.

The Strategic Plan 2018-2020 of the SEQC^{ML} proposes a series of measures, divided into several strategic areas, among which the following stand out: **promoting the value of the clinical laboratory** for more efficient management of the National Health System (NHS), **promoting excellence** in scientific-technical activities, **improving the perception by its members** of Society activities, **making the SEQC^{ML} visible** in society in general and **promoting generational change**.

QUALITY AND INNOVATION



SEQC^{ML} at the National Congress

In order to strengthen the value of Laboratory Medicine, the Strategic Plan focuses on quality and innovation. “The best way to improve our scientific standards is to open ourselves to the clinical aspects of the specialty, participating in congresses of other specialties, and collaborating with international societies for Laboratory Medicine, such as *The International Federation of Clinical Chemistry and Laboratory Medicine* (IFCC), *The European Federation of Clinical Chemistry and Laboratory Medicine* (ELFM) and *The International Council for Standardization in Haematology* (ICSH)”, explains Dr. Caballé. In this sense, one aim is to strengthen the Clinical Laboratory Journal’s role in dissemination, as it includes original articles as well as reviews and clinical guides produced by the Society. The goal of this initiative is for the magazine to be indexed; i.e. included in the Integrated Classification of Scientific Journals.

Another axis of the new Strategic Plan is to reinforce the prominence of its members. In the words of Dr. Francisco Antonio Bernabeu, vice president of the SEQC^{ML}, the aim is to “open up new options for improving their scientific-technical training” and also the perception that this would have of the excellence of the Society’s activities. Direct communication with members will also be strengthened, with publications every two weeks on the website and a biennial survey.

In addition, as an innovative element, the Strategic Plan emphasizes the importance of giving the SEQC^{ML} visibility in society in general. To this end, a series of actions are proposed that will begin with an update of the Society’s website and greater participation in social networks. In addition, the SEQC^{ML} will be provided with “unambiguous signs of identity” via a series of documents, such as a Style Manual, Partner’s Manual, and training guides.

In this line, Dr. Bernabeu highlights the importance of “making the SEQC^{ML} known”, promoting its participation both with institutional bodies - the Ministry of Health and Education, FACME, FENIN, etc. - and with other medical societies. At the international level, in addition to contacts with the IFCC, ELFM and ICSH, “we will strengthen contacts already initiated with Latin American societies and professionals”, advances Dr. Bernabeu.

Finally, the Strategic Plan focuses on the idea of generational change, for which it also foresees a series of initiatives. *“This Plan is the spearhead of an innovative impulse coming from the Society itself and must be supported by generational change”*, explains the vice president. Therefore - in addition to all the benefits that members have, such as scholarships, advice, or job postings - the Plan will introduce free membership fees during the member’s training period.

“The SEQC^{ML} will use this free access as a means to encourage the training of residents. We must ensure that there is a balance between the know-how provided by senior members and the freshness provided by the new additions to the Society. Everything that favors these new additions will be welcome,” he concludes.

MEMBER OF :

THE SEQC^{ML}

The Spanish Society of Laboratory Medicine (SEQC^{ML}) – founded in 1976 – currently includes more than 2,500 professionals, and its main objective is to bring together all scientists interested in the Clinical Laboratory field, to promote the dissemination of scientific and technical publications, to organize meetings, courses and congresses of a national and international nature, and to cooperate with other Scientific Societies. Likewise, the Society wishes to contribute to the study and recommendation of standardized methods and the establishment of guidelines and recommendations for training in the field of Laboratory Medicine.

For more information: www.seqc.es.

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News from Pakistan (PSCP)

Meeting Report – World Rare Diseases Day 2018

by *Sibtain Ahmed*

Consultant Chemical Pathologist

Aga Khan University Hospital, Karachi, Pakistan



World Rare Diseases Day event at Aga Khan University, 28 February 2018

With events happening in over 80 countries across the globe, World Rare Diseases Day was observed at the Aga Khan University Hospital (AKUH) on 28 February 2018 with a collective participation of patients, family members, health care providers and the general public.

As the theme of this year's event was 'research' a continuing medical education (CME) programme was conducted by the Department of Pathology and Laboratory Medicine in collaboration with the Department of Paediatrics and Child Health AKUH, Pakistan Paediatric Association and Pakistan Society of Chemical Pathology.

The highlight of this year's event was the face painting social media campaign organized by AKUH, in order to raise awareness of rare diseases and show support and solidarity for the rare disease community. All the attendees and speakers actively participated in this campaign.

The seminar was moderated by Dr. Lena Jafri and the proceedings were officially initiated by a welcome note by the service line chief of the department of Pathology and Laboratory Medicine Dr. Farooq Ghani who emphasized the importance of timely diagnosis and acute interventions for rare diseases to attain better outcomes.

Article continued on next page

It was followed by a talk by Dr. Aysha Habib Khan based on the perspective of inherited metabolic disorders (IMDs) in Pakistan alongside the challenges and the strategies to combat such hurdles.

The next two presentations were by Dr. Sibtain Ahmed and Dr. Hafsa Majid and were focused on Hyperphenylalaninaemia and Methylmalonic Acidurias respectively explaining the spectrum of the disease, pathogenesis, aetiologies, diagnostic algorithm and appropriate treatments.

Dr. Sibtain emphasized the importance of differentiating aetiologies of Hyperphenylalaninaemia to attain better patient outcomes.

Dr. Hafsa elaborated that Methylmalonic Aciduria was a common biochemical finding in high risk patients suspected of having IMDs in Pakistan. She discussed the utility of analyzing serum vitamin B12, folic acid and plasma homocysteine in these patients.

Subsequently Dr. Bushra Afroze one of the leading clinical biochemical geneticists of the country delivered her presentation highlighting the challenges in managing organic acidaemias & aminoacidopathies in Pakistan. She emphasized the lack of local access to various diagnostic tests and high cost of treatment that are encountered as potential confounders adding to the miseries of patients.

The evening was concluded with a fruitful panel discussion headed by Dr. Salman Kirmani with the presence of eminent paediatricians from leading hospitals of the country and representative of Pakistan Paediatric association (Karachi chapter).

The discussion revolved around the need for advocacy by all stake holders of the health of the children of Pakistan including physicians and the Government of Pakistan.

A formal refreshment programme followed where participants had a chance to mingle with the experts and share their views.



Face-painting social media campaign to raise awareness of rare diseases

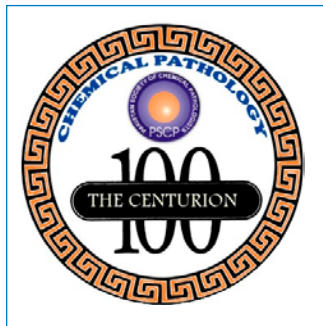


CHEMCON 2018

The 9th Annual Course of the Pakistan Society of Chemical Pathologists

by Sara Reza

Quaid-e-Azam Medical College, Bahawalpur, Pakistan



The new Centurion logo

The 9th Annual course of the Pakistan Society of Chemical Pathologists, **CHEMCON 2018**, was held between 23-24 February 2018, at Quaid-e-Azam Medical College, Bahawalpur, Pakistan.

The conference was well attended by consultants and trainees of Chemical Pathology from all over Pakistan. The conference started with the pre-conference workshop on "Blood gas analysis" conducted by Brig (R) Aamir Ijaz. The opening ceremony had a special welcome from president PSCP, Prof. Asim Mumtaz. With a focus on patient's health, the theme of conference was "From diagnosis to Patient's care" and was presented by the Head of Pathology Department, Prof. Asma Shaukat in her state of the art lecture.

After the inaugural session the honorable guests were entertained with a variety of recreational activities including the local Cholistani cultural show and visit to the majestic Palaces of Nawab of Bahawalpur, which is why it is often known as the "Princely State". Shields were distributed at the Gala dinner. These activities promoted social interaction and networking among participants, making CHEMCON 2018 a communal event beyond the conference venue.

The conference addressed a variety of topics relevant to the main theme: diabetes mellitus, diagnosis & monitoring update, enjoy your breakfast, evaluation of short stature-the right way, role of supervisors: FCPS training, professionalism and emotional intelligence. The sessions also provided a reflection on the role of supervisory skills in this specialty. After the plenary session there was oral and poster presentations by the trainees.

"The Chem Gems" – Wall of Fame

Article continued on next page



Group photo of participants at CHEMCON 2018

The sixth issue of “The Spectrum”, official newsletter of PSCP was distributed among the participants and celebrated the landmark of “The Centurion”- number of FCPS consultants exceeded one hundred.

The schedule of CHEMCON 2018 was quite busy, with an extensive programme. The Pakistan Society of Chemical Pathologists has always provided a good platform for discussion of new ideas and exchange of information.



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AND LABORATORY MEDICINE

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14th EFLM SYMPOSIUM FOR BALKAN REGION

Neighbouring Countries: The Same Professional Aim



Belgrade (SRB) – 23-25 May 2018

The Society of Medical Biochemists of Serbia takes pleasure in inviting you to the 14th EFLM Symposium for Balkan Region being held under the title ***Neighbouring Countries: The Same Professional Aim***.

The 14th EFLM Symposium for Balkan Region will be organized on 23-25 May 2018, during the XXI Serbian Congress of Medical Biochemistry and Laboratory Medicine with the participation of the European and domestic specialists in the field. Click here to download the programme: http://www.dmbj.org.rs/pdf/14_EFLM_program_2018.pdf.

EFLM BURSARY PROGRAMME FOR YOUNG SCIENTISTS ATTENDING THE BALKAN SYMPOSIUM

EFLM is promoting a bursary program for young scientists attending the 14th EFLM Balkan Symposium in Belgrade. The bursaries will cover the cost of travel and 2 nights of accommodation for a maximum of EUR 500. EFLM Bursary recipients will also receive free congress registration, kindly offered by the Conference Organizer Committee.

Eligible candidates must come from an EFLM Member Society and be ≤35 years at the date of the conference.

Applications must be submitted through the proper application form (downloadable from www.eflm.eu under the section EFLM Bursaries) and accompanied by the following documentation:

- Copy of government-issued ID or passport;
- Document proving the membership of the National Society;

Applications have to be sent to silvia.cattaneo@eflm.eu by **10 May 2017**.

by *Maria Stella Graziani*

Chair of the EFLM Communication Committee

The use of error and uncertainty methods in the medical laboratory

Oosterhuis WP, Bayat H, Armbruster D, Coskun A, Freeman KP, Kallner A, Koch D, Mackenzie F, Migliarino G, Orth M, Sandberg S, Sylte MS, Westgard S, Theodorsson E.

All authors are members of the Task and Finish Group on Total Error of the EFLM.

Clin Chem Lab Med 2018; 56: 209–9

This paper presents the consensus reached within the EFLM task group established after the 1st Strategic EFLM Conference (Milan, 2014). The task of the group was to elaborate a proposal on how to use the Total Error concept and how to possibly combine measures of bias and imprecision in performance specifications. The conclusion of the paper is that error methods are at the moment the most widely used methods for quality assurance and analytical performance specifications in laboratory medicine and that error and uncertainty methods are complementary when evaluating measurement results in medical laboratories.

The EFLM Working Group on pre-analytical phase (WG-PRE) issued two more papers related to the management of samples with haemolysis, icterus and lipaemia—continuing their effort towards the harmonization of the pre-analytical phase.

Practical recommendations for managing haemolyzed samples in clinical chemistry testing

Lippi G, Cadamuro J, von Meyer A, Simundic AM, on behalf of the EFLM Working Group for Preanalytical Phase (WG-PRE)

Clin Chem Lab Med 2018 doi 10.1515/cclm-2017-1104

The aim of this paper is to suggest a pragmatic approach for managing results of clinical chemistry testing in haemolyzed samples, attempting to balance the need to produce quality laboratory data with clinical need to release the test results. You can find here below a short summary of the main recommendations; however, a careful reading of the paper is highly advisable. 1. Always check the sample quality before testing; 2. Preferably use the automatic assessment of the H-index; 3. If it is not available, visual assessment is allowed; 4. The H-index results should be transferred to the lab information system; 5. Define a standardized procedure to manage the test results in hemolyzed samples; 6. Always use control materials to check the analytical performance of the H-index.

Local quality assurance of serum or plasma (HIL) indices






Lippi G, Cadamuro J, von Meyer A, Simundic AM, on behalf of the EFLM Working Group for Preanalytical Phase (WG-PRE)

Clin biochem 2018 doi 10.1016/j.clinbiochem-2018-02-018

This article is aimed to provide an expert opinion about management of internal quality control (IQC) assessment for HIL indices. The Authors support the use of in-house prepared IQC materials with at least two different levels for each interfering substance (haemoglobin, bilirubin, lipaemia). IQC testing should be performed at least two times per day, and systematically recorded. When results do not meet their set performance goals, the ensuing procedure should mirror that of conventional laboratory IQC management. These recommendations should help clinical laboratories improving the quality of the total testing process.

IFCC's Calendar of Congresses, Conferences & Events

Calendar of IFCC Congresses/Conferences and Regional Federations' Congresses

Jun 20 - Jun 22		<i>International IFCC Course on Flow Cytometry</i>	Istanbul, TR
Jul 2 - 4, 2018		<i>1st IFCC, EFLM, AFCB Conference "Laboratory Medicine: Meeting the needs of Mediterranean Nations"</i>	Rome, IT
May 19 - 23, 2019		<i>IFCC - EFLM EuroMedLab 2019</i>	Barcelona, ES
Sep 11 - 13, 2019	 COLABIOCLI	<i>COLABIOCLI Regional Congress 2019</i>	Panama, PA
Nov 17 - 20, 2019		<i>APFCB Regional Congress 2019</i>	Jaipur, IN
May 24 - 28, 2020		<i>XXIV IFCC WorldLab - Seoul 2020</i>	Seoul, KR
May 16 - 20, 2021		<i>XXIV IFCC - EFLM EuroMedLab - Munich 2021</i>	Munich, DE
May 21 - 25, 2023		<i>XXV IFCC - EFLM WorldLab - EuroMedLab - Rome 2023</i>	Rome, IT

Calendar continued on next page

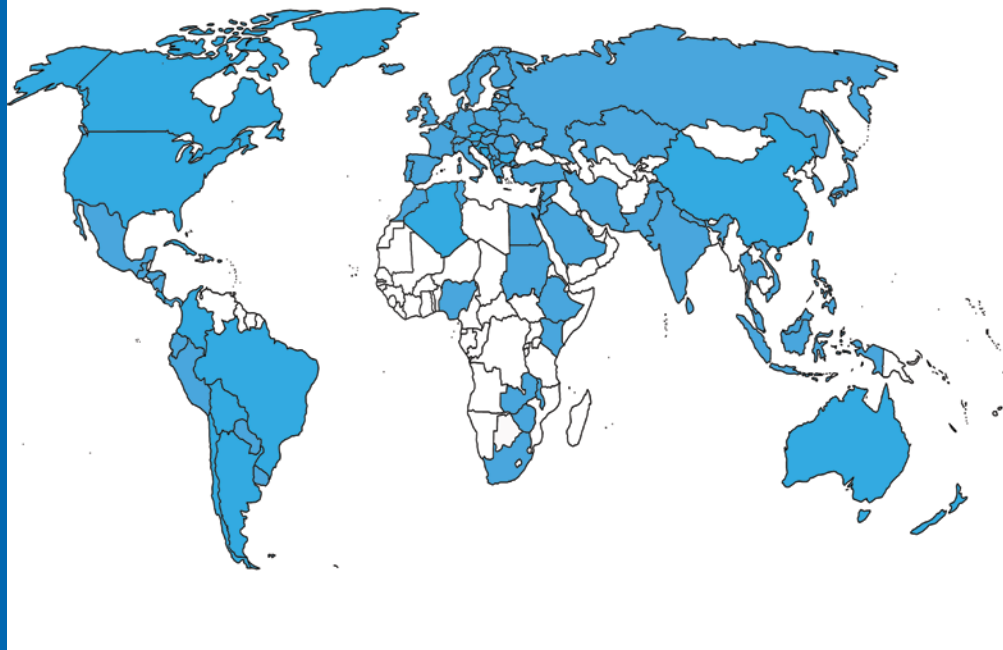
Calendar of events with IFCC auspices

May 23 - 25, 2018	<i>14th EFLM Symposium for Balkan Region</i>	Belgrade, SRB
May 23 - 25, 2018	<i>21st Serbian Congress of Medical Biochemistry and Laboratory Medicine with international participations</i>	Belgrade, SRB
May 24 - 25, 2018	<i>XVI Meeting of the SEQCML Scientific Committee</i>	Madrid, ES
May 30 - 31, 2018	<i>The new era of Laboratory Medicine: from Diagnosis to Clinical Management</i>	Erice, IT
Jun 3 - 6, 2018	<i>CSCC 2018 Annual Conference</i>	Ottawa, CA
Jun 5 - 6, 2018	<i>SERbian Biomarker Symposium (SERBIS) 2018 Men's and Women's Health: Biomarkers in Clinical Practice and Future Approaches</i>	Belgrade, SRB
Jun 6 - 8, 2018	<i>Focus 2018 - Annual Meeting of ACB</i>	Manchester, UK
Jun 12 - 15, 2018	<i>XXXVI Nordic Congress of Clinical Chemistry</i>	Helsinki, FI
Jun 18 - 19, 2018	<i>2nd EFLM Strategic Conference "The end of Laboratory Medicine as we know it? Handling disruption of Laboratory Medicine in digital health"</i>	Mannheim, DE
Jun 21 - 22, 2018	<i>7th International Symposium on Critical Care Testing and Blood Gases</i>	Antibes, FR
Jun 28 - 29, 2018	<i>Clinical Chemistry Iberoamerican Symposium and Expolab Guatemala 2018</i>	Guatemala City, GT
Jun 30 - Jul 3, 2018	<i>International Society for Enzymology Conference</i>	Naxos, GR
Jul 13 - 14, 2018	<i>Turning Science Into Caring (TSIC)</i>	Shanghai, CN
Aug 25 - 28, 2018	<i>15th Iranian National Congress of Biochemistry and the 6th International Congress of Biochemistry and Molecular Biology</i>	Isfahan, IR
Sept 3 - 5, 2018	<i>AACB AIMS 2018 Combined Scientific Meeting</i>	Sydney, AU
Sept 6 - 7, 2018	<i>6th Chromatography Mass Spectrometry Satellite Meeting and Inaugural Chromatography Mass Spectrometry Educational Workshop</i>	Sydney, AU
Sep 26 - 29, 2018	<i>15th Annual Meeting of the German Society for Clinical Chemistry and Laboratory Medicine - The foundation for diagnosis and therapy</i>	Mannheim, DE
Sep 30 - Oct 3, 2018	<i>Santorini Conference "Systems medicine and personalised health & therapy" - "The odyssey from hope to practice"</i>	Santorini, GR
Oct 3 - 5, 2018	<i>26th BCLF Meeting and 6th National Congress of MSMBLM</i>	Skopje, MK
Oct 10 - 13, 2018	<i>5th EFLM UEMS European Congress in Laboratory Medicine</i>	Antalya, TR
Oct 30, 2018	<i>International Conference on Laboratory Medicine "LABORATORY MEDICINE: 25 YEARS ON"</i>	Padova, IT
Nov 1 - 4, 2018	<i>2nd International Cell Death Research Congress</i>	Magosa, CY
Nov 9 - 12, 2018	<i>18º Congreso Internacional del Colegio Nacional de Bacteriología</i>	Barranquilla, CO
Nov 28 - Dec 1, 2018	<i>II International Conference of the Bolivian Society of Clinical Biochemistry</i>	La Paz, BO
Nov 29, 2018	<i>International Scientific Meeting of the Centre of Metrological Traceability in Laboratory Medicine (CIRME) "Standardization in Laboratory Medicine and Patient Safety"</i>	Milan, IT
Dec 7 - 8, 2018	<i>52e Journée de Biologie Praticienne</i>	Paris, FR
Jun 9 - 12, 2020	<i>XXXVII Nordic Congress in Medical Biochemistry</i>	Trondheim, NO

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Russia: Regional Association for Clinical Laboratory Diagnosis, St. Petersburg
Spain: Asociación Española de Farmacéuticos Analistas (AEFA)
Turkey: Society of Clinical Biochemistry Specialists (KBUD)
Ukraine: Association for Quality Assurance of Laboratory Medicine (AQALM)

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Starting in 2018, the Communications and Publications Division publishes ten editions of the e-News per year, including two double issues.

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N° 5 – June: by mid May

N° 6/7 – July: by mid June

N° 8 – September: by mid August

N° 9 – October: by mid September

N° 10 – November: by mid October

N° 11/12 – December: by mid November

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