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International Federation of Clinical Chemistry and Laboratory Medicine





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EDITORIAL

Message from the eNews Editor

by Katherina Psarra
eNews Editor

Dear colleagues,

September is here again and most of us are back to work with full batteries (I hope) and wishes for a pleasant return.

We are all looking forward to new developments at work trying to keep pace with them. They are these developments in our lab work that make our life much more interesting and full of surprises.

In this eNews issue we can find out a lot about these developments. People in IFCC committees and workgroups are studying them and are trying to make them easy and accessible to colleagues all over the world. Should we adopt them? Under which circumstances? Go through the articles and discover what is new, what is worth trying and what you should all know. Discover the people and the societies in order to connect with them. Lab-testsonline editors meeting is in the news as well explaining the present and the future of this important website.

Don't forget the congresses and meetings lying ahead.

Welcome back to the fascinating lab word!

Katherina Psarra



News from the IFCC Website



IFCC eNews Flash August 2019

IFCC eNews Flash August edition is now available. This issue includes:

- * UNIVANTS of HCE Awards announcement: twelve integrated clinical care teams receiving recognition from the Award programme
- * Visit the IFCC booth at AACC
- * IFCC TF-YS-Snibe Travel Awards for Young Scientists to attend the 15th APFCB 2019, Jaipur (IN) - visit the website to get information on how to apply!
- * ICPLM Congress to be held as WorldLab satellite meeting in Seoul.

Stay tuned with IFCC, read the eNews Flash!

[Read more](#)

THE VOICE OF IFCC

Introducing the IFCC Working Group on Guidance for the Implementation of Custom-made Genomic Panels (WG-CGP)

*by Jennifer J.D. Morrisette, PhD, FACMG
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of Custom-made Genomic Panels (CGP)
Scientific Director, Clinical Cancer Cytogenetics
Clinical Director, Center for Personalized Diagnostics
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Top row, from left: Mohan Narasimhamurthy, Martin Carroll, Yehoda Martei, Concetta Santonocito, Kurtis Davies, Jennifer Morrisette

Bottom row, from left: Carmela Paolillo, Mark Ewalt, Melina Marmarelis, Oyetunji Soriyan, Robyn Sussman, Jeremy Segal

The new IFCC Working Group on Guidance for the Implementation of Custom-made Genomic Panels (CGP) is part of the new Emerging Technology Division (ETD). The ETD provides current awareness of emerging technologies likely to have important roles in clinical diagnostics in the near future. The WG-CGP will address the difficulties, developing countries may have in the implementation and interpretation of genomic

findings by providing educational materials, access to industry partners and a practical framework.

Next generation sequencing (NGS) and other genomic tools are increasingly being used as part of the diagnostic work-up in the academic medical oncology hospital setting. Implementation of NGS assays can be costly and complex, which can be prohibitive in a setting with limited genomic experience, such as

a community hospital. Genomic technologies are diverse and can range from relatively simple point-of-care testing for clinically relevant targets to very complex testing of the whole genome or whole transcriptome. Timely detection of targetable mutations is beneficial to patients, and therefore clinically validated testing of critical molecular targets in-house is desired.

The members of the CGP include an international team of individuals with broad expertise in clinical genomics (ME, JM, JS), laboratory medicine (ME, JS, OS, JM), test development (RS, KD, CP, CS), pathological diagnostics (OS, MN, JS, ME) and medical oncology (YM, MM, MC). The terms of reference for this new working group are: First, to develop a current awareness website on genomics that will include educational material for genomic test development, a directory of companies active in the clinical diagnostic applications of oncology driven NGS panels, links to educational webinars and seminal papers in genomics. Second, to compose a manuscript describing best practices for validation of custom-made genomic panels. Third, to research a manuscript opinion on best practices for moving genomics into emerging economies. Lastly, to aid in the identification of an appropriate hospital or clinic to perform genomic testing associated with targeted therapy in the oncology setting.

The biggest hurdles for the implementation of custom-made or off-the-shelf genomic testing are the

lack of trained personnel, scalability, cost and determining the right fit for the hospital. Our educational component will address the basic principles of genomics and genomic assays; our website will serve as a resource for anyone validating a genomic assay regardless of location. The website will also facilitate partnership between industry leaders and laboratories moving into genomics by suggesting appropriate equipment, reagents and analysis components necessary for genomic assays. The members will write a manuscript that will summarize the multiple papers that describe validation and reporting of genomic testing, and provide suggestions for best practices, including examples of how to interrogate the different performance characteristics required for clinical validation.

Genomic testing in the community hospital can be difficult due to lack of proficiency needed for validation and analysis, which is compounded in nations that have more limited local expertise. The clinical needs for mutation detection can differ considerably between countries due to different rates of cancers and available treatment options. The working group will survey clinicians to better understand the local needs in emerging nations, and write a manuscript detailing our findings. Through this process we hope to identify hospitals or clinics where genomic testing will improve the health care of the local community, and help validate and implement routine clinical testing in these locations.

News from the IFCC Website



2019 Univants Awards

Last year, the IFCC joined Abbott and other six leading healthcare organizations across the globe including AACC, EHMA, Modern Healthcare, HIMSS, NAHQ, and IHE, to launch the UNIVANTS of Healthcare Excellence Award. The award annually recognizes interdisciplinary care teams who collaborate across disciplines and transform healthcare delivery, and ultimately patient lives. This year, twelve integrated clinical care teams have been recognised for excellence in measurably better healthcare performance.

[Read more](#)



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IN PARTNERSHIP WITH



INSTITUTE OF
HEALTH ECONOMICS

Introducing the WG on Patient Based Real Time Quality Control

by Tony Badrick

WG Chair

Andreas Bietenbeck, DE

Mark A Cervinski, US

Alex Katayev, US

Tze Ping Loh, SG

Huub H van Rossum, NL

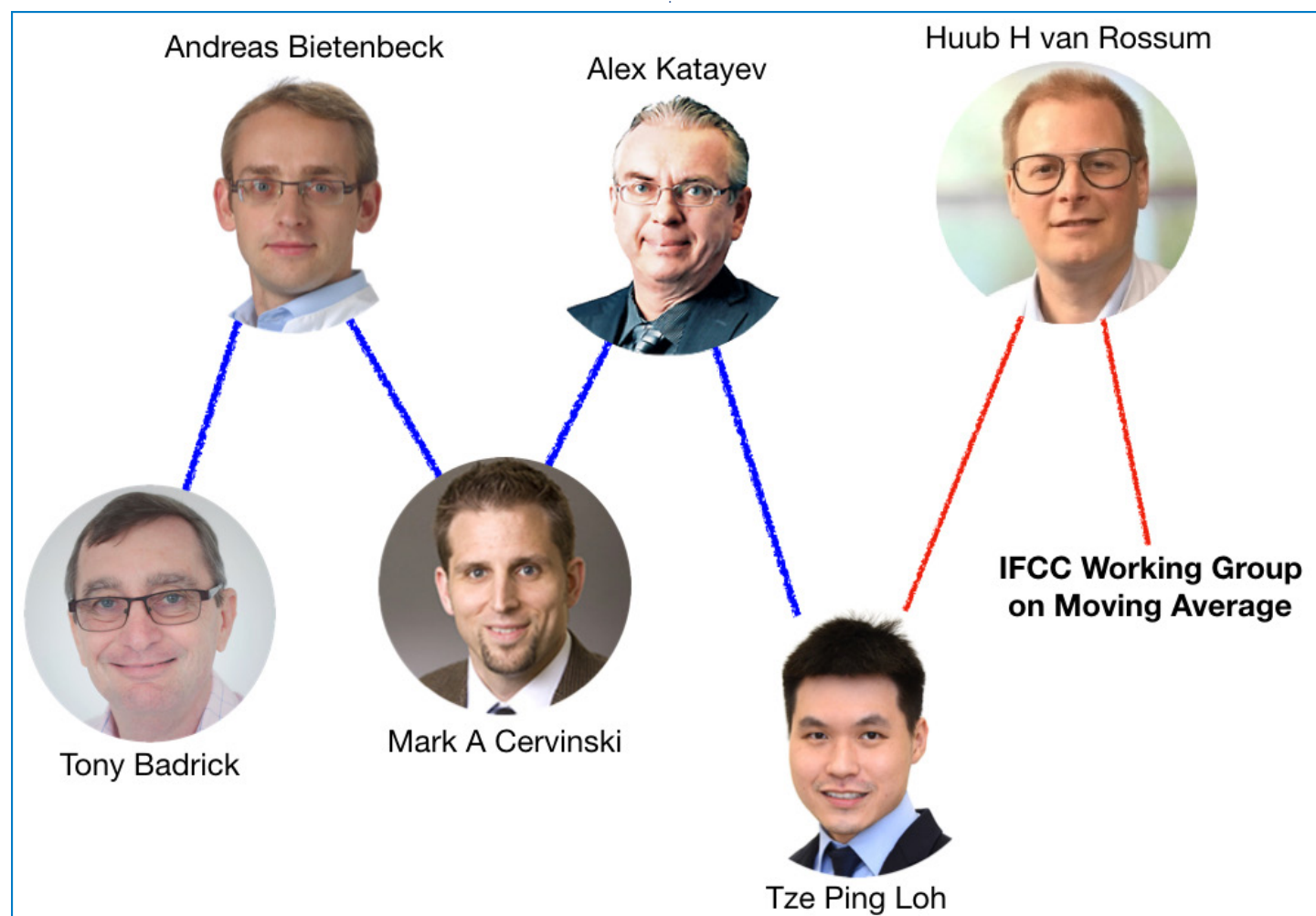
WG members

The use of patient sample derived Quality Control techniques has been described for more than fifty years. These samples have been widely used routinely in hematology for over forty years, however, because of practical issues they have not been widely utilized in clinical chemistry laboratories (1).

Recently because of the availability of middleware and a greater appreciation of the benefits of these

processes, there has been a willingness to investigate their use as a QC tool.

Patient Based Real Time Quality Control (PBRTQC) techniques use parameters calculated from patient samples in real time as a form of Quality Control. The advantages of a patient-based system are many. The relatively low frequency of use of conventional QC samples can lead to poor error detection and a risk



Article continued on next page

of release of inaccurate patient results. Non-commutability of conventional QC material leads to higher rates of false rejection and lower rates of true error detection. In addition to this problem, some QC materials may have different measured concentrations on different analyzers because of matrix effects. PBRTQC processes are also sensitive to pre-analytical errors such as transport or sample preparation. There may be a lack of conventional QC material for some uncommon assays, and the use of PBRTQC techniques can significantly reduce the volume of conventional QC material and hence cost. The fact that PBRTQC methods are real time processes allows earlier detection of a problem.

PBRTQC systems are much like conventional QC in that a parameter such as the population mean, or median is calculated for a given number of patient samples (the block size) and updated with the analysis of each new sample (2). The new mean is compared with predetermined control limits (based on the SD of the population mean) and if within these limits, the assay is considered in control. In some assays it is necessary to exclude very high or low results, as they can be encountered clinically, to ensure that the mean is not unduly affected by outlier results. The process of removing these outliers is called truncation of the population. Sometimes it is necessary to have more than one population (eg inpatient and outpatient) for some assays where there is a significant difference between these groups (eg calcium). However, this is usually not the case. In addition to a PBRTQC based on an arithmetic mean, a laboratory can also choose to use a weighted mean where recent samples have a greater impact on the calculation. As well as means and medians, other parameters that are used in PBRTQC include data transformations such as logarithms of the mean or median, square roots of results, and the percentage of abnormal results.

The disadvantages of PBRTQC are primarily the initial complexity of finding the optimal algorithm with associated block size and truncation limits. There is a need to understand the patient populations as well as the underlying characteristics of the analyte and the analytical method being used. Often it is necessary to model the process to find the best combination and this is a challenge when current middleware and

instrument-based software are not available for this purpose (3). Middleware and analyser software need to have the capability to offer a range of different calculations and algorithms to allow laboratories to at least extract patient data in order simulations to be undertaken that will allow a laboratory to confidently select and validate the optimal PBRTQC models.

An IFCC Working group has been formed under the auspices of the Committee on Analytical Quality with the following goals:

1. To provide awareness, education and training on PBRTQC systems in the clinical laboratory which include:

- Guidance on the principles of PBRTQC and its implementation
- Develop practical recommendations for verification procedures for laboratories adopting PBRTQC, based on sound statistical principles
- Improve the sensitivity of error detection and reduce false rejection rates due to the lack of commutability of commercially available QC materials
- Reduce the number of repeated testing and correcting results due to the constant real time control of analytical instrument performance
- Improve cost-efficiency of QC procedures by reducing the use of conventional control materials
- Use state of the art statistical algorithms based on risk assessment and analyte and method-specific rejection rules
- Allow laboratory personnel to visually assess multiple instrument performance parameters on a single dashboard and ability to receive visual, audible, or electronic alerts when significant errors are detected

2. To promote the implementation of PBRTQC by industry engagement and participation:

- Actively engage with instrument, middleware and laboratory information system providers to discuss IT requirements and algorithms for optimal implementation in routine clinical laboratories

3. Education and training will be provided through multiple channels to ensure widest reach, including:

- Guidance documents and publications
- Online presentations
- Workshops and seminars
- Consultation and advice to laboratory practitioners and industry

4. To collaborate with other IFCC Committees, Working Groups, professional bodies and industry partners to achieve these aims.

It is inevitable that PBRTQC techniques will be in widespread use in the future. For high volume assays they are superior to conventional QC. For small batch type assays where the QC samples can be used to bracket patient samples, conventional QC has a place. The next areas of work with PBRTQC will be in semi-quantitative assays where some instrument signal such as signal/cutoff value will be used as the moving parameter. The future may also include using Artificial Intelligence to look for patterns of results such as they would occur if a common instrument measuring

device is affected (ISE) or there are common reagents on multiple analysers.

In the future the Working Group will call for interest expression by members from industry.

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New IFCC Working Group on Continuous Glucose Monitoring (WG-CGM)



Dr. Guido Freckmann

by Guido Freckmann

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In July, a new IFCC working group has been established. The “Working Group on Continuous Glucose Monitoring (WG-CGM)” was initiated by Dr. Guido Freckmann, Chair and his Co-Chair Dr. Robert Slingerland. Both have a background in glucose monitoring and recognized the urgent need for quality control of systems for continuous glucose monitoring (CGM) that are increasingly used by patients with diabetes. CGM systems measure the glucose concentration in interstitial fluid (which is usually but not always lagging behind the blood glucose concentration). By using smart algorithms CGM systems try to predict the actual blood glucose concentration.

In contrast to blood glucose monitoring systems, which are well-regulated, there are no standards for CGM systems nor established metrics to describe accuracy. In addition, as they measure glucose

in the interstitial fluid, CGM values cannot easily be traced to higher order materials or methods.

Recently, Time in Range (TiR), i.e. the absolute time or percentage of time a person with diabetes spends in certain predefined glucose concentration ranges, has been established as a new “biomarker” of glyce-mic control, complementing HbA1c as a marker that better reflects short-term therapy effects and, in addition, delivers information on high and low values while HbA1c is an average. For the successful applica-tion of TiR it is essential that glucose concentrations measured by CGM are traceable and that different CGM systems provide comparable values for the re-spective TiR.

The aim of this working group is to establish the trace-ability of glucose values obtained by CGM to mate-rials and methods of higher metrological order, and to establish suitable metrics for the evaluation of the analytical performance of CGM. To obtain traceabil-ity it is necessary to define the measurand, i.e. the substance, the matrix (and the unit). It needs, e.g., to be specified whether a CGM systems aims to predict capillary blood or venous blood glucose values. Suit-able means sufficient for establishing the traceability, appropriate for calibration of CGM systems or for use as reference in analytical performance studies.

In the last decade, a large number of publications about analytical performance results from clinical tri-als were published. In combination with publications focusing on factors influencing apparent analytical

performance, a standardized set of study procedures may be derived from the literature through litera-ture review and subsequent modelling/simulation of these factors’ effect on analytical performance. Addi-tional experimental work may be required if certain influencing factors are not sufficiently defined.

Metrics and corresponding acceptance criteria that are suitable to assess the analytical performance of CGM systems need to be identified from the vast array of parameters used in the literature. Metrics should not only focus on analytical performance, but also reflect clinical relevance of glucose values obtained by CGM. Experimental work will likely be helpful in establishing metrics and acceptance criteria, because study procedures are known to impact the apparent analytical performance. After standardized study pro-cedures are established, suitable metrics and accept-ance criteria may be derived from experimental re-sults or model simulations.

The working group intends to cooperate with ISO to define acceptable procedures and acceptance criteria to assess analytical performance criteria of CGM sys-tems, with similar scope as that of ISO 15197, which defines procedures and acceptance criteria for sys-tems for self-monitoring of blood glucose. In addition criteria for professional use (e.g. in hospitals) need to be defined.

For more information, visit the WG-CGM webpage at: <https://www.ifcc.org/ifcc-scientific-division/sd-working-groups/wg-cgm/>.

IFCC: THE PEOPLE

Welcome and thanks to the Chairs

FAREWELL TO ULRICH SACK (DE)

Ulrich Sack has been the chair of the Working Group Flow Cytometry from 2011 to 2018. After his Medical study at Leipzig University and a fellowship of the Alexander von Humboldt Society at the Clinical Research Groups of the Max Planck Society in Erlangen, he completed his qualification in Clinical Immunology. Since 2002, he has been holding a professorship at the Institute of Clinical Immunology, University of Leipzig, Germany. His main



Ulrich Sack

“Cellular Diagnostics”, edited with Attila Tarnok and Gregor Rothe, has set standards for clinical cytometry within the last 10 years.

Ulrich Sack will continue this work: he joined the IFCC Mentorship Programme, and promotes projects for quality in laboratories worldwide.

Thank you, Ulrich for your hard work and commitment to spreading knowledge!

interest is translation of recent developments in immunology into clinical laboratories. Therefore, from 2008 to 2015 he supported the Translational Centre for Regenerative Medicine (TRM) at the University of Leipzig in the function of the Research Director. Furthermore, he was a group leader and advisor at the Fraunhofer Institute for Cell Therapy and Immunology from 2005 to 2015. He is involved in several networks of scientific experts in the field of clinical immunology and laboratory diagnostics. As a technical assessor, he promotes ISO 15189, 17025, and 17043 accreditation in Germany, Ireland, and Arab countries and continuous transferring novel laboratory methods into clinical routine diagnostics.

His work focuses on cellular immunology, with a strong focus on immunodeficiencies and flow cytometry. His research is focused on interdisciplinary research and on the interaction of the immune system with disease conditions. In the fields of immunodiagnostics, psychoneuroimmunology, inflammatory diseases, and regenerative medicine, he published around 300 research papers. His focus in the IFCC was education in recent flow cytometry. During his active time here, 16 flow cytometry courses were offered in Europe, Asia, and South America, covering basic science, immunology, and hematology. The book



Claude Lambert

WELCOME TO DR. CLAUDE LAMBERT (FR)

Dr. Claude Lambert (MD, PhD) is the new chair of the IFCC Special Project Flow Cytometry (WG-FC). Dr. Lambert has been involved in IFCC Working Group on Flow Cytometry since some years. He works in an Immunology lab in University Hospital of St Etienne in France. His main interest is the multi-parameter analysis of cell populations (cell sociology), specifically in cognate immune response (all T cell types).

Dr. Lambert says: “The immune system is a highly complex system, in dynamic relationships with its environment, the large spectrum of the body protection depending on the diversity and plasticity of the system. Cytometry is the only tool able to approach the analysis of this complexity. I am mainly using flow but I also use image and computing approaches”.

In memory of Alejandro Ruiz-Argüelles†

by Rosa Sierra-Amor

IFCC Regional Representative

Member WG eNews

Alejandro Ruiz-Argüelles, was born in Puebla, Mexico, in 1952, he received his MD in 1976 from the Universidad Autónoma de San Luis Potosi (Mexico). With fellowships from the Consejo Nacional de Ciencia y Tecnología, from the Mayo Clinic and Research Foundation, and from the Fogarty International Center of the National Institutes of Health, he undertook postgraduate training in Medical Immunology at the Universidad Nacional Autónoma de México/Instituto Nacional de Nutrición (1976–1980) and at the University of Minnesota/Mayo Graduate School of Medicine (1980–1982). He was certified by the American Board of Medical Laboratory Immunology in 1982. Back in Mexico, Dr. Ruiz-Argüelles became a member of the National Academy of Medicine in 1988 and was registered in the Sistema Nacional de Investigadores (National Researchers System) as one of the 20 most-cited biomedical Mexican scientists.

He served as a full member of the Scientific Division of the IFCC from 1989 to 1991, and as the Vice-Chairman of the same Division from 1992 to 1996. He also was the Chair of the IFCC Scientific Division's Committee on Standardization of Clinical Flow Cytometry and an active member of the Scientific Advisory Committee of the International Society for Analytical Cytology. In 1997, he received the AACC 19th annual award, sponsored by Becton Dickinson Vacutainer Systems, Becton Dickinson and Co. (1). In México, and in collaboration with Drs. Donato Alarcón-Segovia† and Luis Llorente, he pioneered an original research field related to the diffusion of autoantibodies into living cells, and the multiple functional effects of this phenomenon. In the field of laboratory medicine. Alejandro developed some analytical methods in hematology and coagulation, and his interest in flow-cytometric procedures led him to promote the use of this technology in Latin America through delivering lectures and organizing courses and workshops. He gathered the 1st and 2nd Latin American Consensus Conference for Immunophenotyping of Leukemia, the results of which might prove useful as guidelines for other developing regions of the world. At the national level, he pioneered the field of flow cytometry, and founded the chapter of this field at the Mexican Society of Immunology. He published 126 scientific articles, and contributed 21 chapters in books. He was faculty member at the Universidad de las Américas Puebla and at the Universidad Popular Autónoma del Estado de Puebla. For 37 years, he was the Medical Director of Laboratorios Clínicos de Puebla, a private practice institution devoted to Laboratory Medicine in a very broad sense, where patient care, teaching, and research have been equally important.



Alejandro Ruiz-Argüelles, MD

He gathered the 1st and 2nd Latin American Consensus Conference for Immunophenotyping of Leukemia, the results of which might prove useful as guidelines for other developing regions of the world. At the national level, he pioneered the field of flow cytometry, and founded the chapter of this field at the Mexican Society of Immunology. He published 126 scientific articles, and contributed 21 chapters in books. He was faculty member at the Universidad de las Américas Puebla and at the Universidad Popular Autónoma del Estado de Puebla. For 37 years, he was the Medical Director of Laboratorios Clínicos de Puebla, a private practice institution devoted to Laboratory Medicine in a very broad sense, where patient care, teaching, and research have been equally important.

(You can read more about Alejandro Ruiz-Argüelles on [AACC.org](https://www.aacc.org).)

IFCC: THE YOUNG SCIENTISTS

**IFCC-TFYS at APFCB (Asia-Pacific Congress of Clinical Biochemistry)
November 17 - 20, 2019 – Jaipur, India**

*by Prof. Pradeep Kumar Dabla
Chair, IFCC-TFYS*

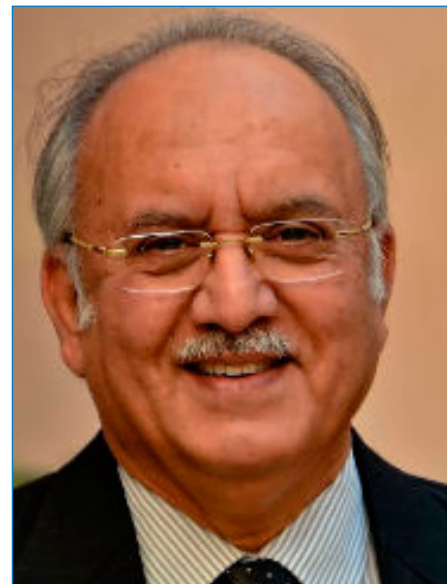
On behalf of Organizing Committee APFCB 2019, it is our immense pleasure to invite you all to join exciting and informative scientific programme encompassing plenary lectures, symposia and workshops related to themes close to heart of laboratory medicine & clinical chemistry to be delivered by hundreds of world-renowned experts. Congress is being organized at state - of - the - art Jaipur Exhibition & Convention Centre. Jaipur is popular as “Pink City” and situated in the royal deserts of the Rajasthan state. This beautiful city of Monuments and forts was founded by Maharaja Sawai Jai Singh II in the year of 1727 AD.

IFCC-TFYS is able to continue education programmes with continuous and throughout support of senior members APFCB & IFCC especially Organising Chairperson Prof. Praveen Sharma, APFC B 2019. **IFCC-CCLM & IFCC-TFYS is organizing a pre-congress joint workshop** titled “Building Tomorrow’s leaders by the young generation” delivering informative & encouraging talks by Prof. Praveen Sharma, Prof. Edward Randell, Dr. Pradeep K Dabla & Prof. Sedef Yenice to be held on November 17, 2019. Further, **IFCC-TFYS is organizing symposium** 26, November 19, 2019 titled “Clinical Chemistry to Clinical Laboratory Science - Future Challenges” to be Chaired by Prof. Maurizio Ferrari, President IFCC & Dr. Pradeep K Dabla, Chair IFCC TFYS. The symposium includes refreshing & distinguished talks by Core Members Dr. Guilaine Boursier, Dr. Santiago Fares Taie, Dr. Giulia Sancesario & Dr. Joe El-Khoury.

APFCB 2019 is coming with excellent & numerous Awards & Bursaries for young scientists to join congress from different authorities. IFCC is awarding 5 Roche Scholarships, APFCB is awarding 12 Scholarships, ACBI is supporting 20 Bursaries & awards. Promoting education & research for young colleagues, IFCC TFYS is able to provide “**IFCC TFYS Snibe Travel Awards**” with generous support by Snibe to join & present research work at APFCB 2019. “3 Young Scientists” will be selected for travel awards and each Award will consist of a certificate & amount value of the sum SGD-1000. Young Scientists from IFCC member countries are encouraged to apply. TFYS is thankful to all senior members and authorities for grand support to young scientists to join this academic feast.

For more information visit:

<http://www.apfcbcongress2019.org/welcome-message>.



Prof. Praveen Sharma
Chairman, Organizing Committee
APFCB 2019



Prof. Pradeep K Dabla
Chair, IFCC-TFYS
Convener Scientific Committee
APFCB 2019

CONTRIBUTE TO THE IFCC eNEWS



Leading research at Oxford leads to Best Practice Award for their pre-eclampsia care



Pictured above are some of the Oxford team that worked on the preeclampsia testing developments

From left to right: Lorenz Quezon, Catalina Carrasco Alvarez-Ossorio, Matthew Covill,

Manu Vatish, Joao Leite, Linda Holden, Tim James, Sofia Cerdeira

Not pictured: Guy Checketts, Julia Eades

Oxford University Hospitals NHS Foundation Trust and Nuffield Department of Women's & Reproductive Health are innovators in clinical practice for the detection and care of pre-eclampsia (PE) in pregnant women. Traditionally, determination of blood pressure and urine proteinuria are used to identify PE in pregnant ladies, but these methods are often inaccurate (PPV of only 20% for the prediction of adverse outcomes).

Therefore, the clinical diagnosis of PE is often uncertain. Dr. Manu Vatish states *"Pre-eclampsia is a condition of pregnancy that is surprisingly difficult to diagnose. The problem is that we diagnose it by high blood pressure and proteinuria, but lots of pregnant women have high blood pressure or proteinuria, for lots of reasons, therefore a lot of women are admitted that probably do not need to be."*

Their team recognized that PE is a pregnancy specific medical condition that has potentially severe sequelae for both mother and child. They appreciated the difficulties that clinicians experience when diagnosing and

Article continued on next page

managing PE in an outpatient setting, causing inappropriate admissions of those without the condition, and occasionally discharge of patients with PE considered not to have the condition based on conventional clinical assessment.

Thus, their team led cutting edge research to investigate the use of new biomarkers and clinical algorithms to guide diagnosis and management of PE. Their avant-garde approach to fill this clinical care gap involves the use of the ratio of fms-like tyrosine kinase 1 (sFlt-1) to placental growth factor PlGF), novel angiogenic biomarkers for PE, combined with an update to clinical guidelines to assist appropriate interpretation of the biomarker results and direction on appropriate subsequent clinical care. Execution of their research and new clinical care guidelines required close collaboration between stakeholders in Laboratory Medicine, Obstetrics, Hospital Administration, and Industry including Market Access.

When test results are interpreted with the updated care guidelines, clinicians have an evidence-based tool to aid in the management of PE. *“This test has improved our ability to make the right decision on admission. Using the test, no one with pre-eclampsia within one week has been missed, so understandably, it has been welcomed enthusiastically by midwives and clinicians working here at the John Radcliffe Women’s Centre, so we’re delighted that it is being made available for women elsewhere in the country,”* said Dr. Sofia Cerdeira, an OUH obstetrician registrar and Academic Clinical Lecturer at the University of Oxford’s Nuffield Department of Women’s & Reproductive Health. With a NPV of 99.3% for 7 days, such confidence is shown in numbers, with a 30% reduction in admissions for suspicion of PE, while simultaneously improving detection of PE in patients who did not present with overt symptoms of the disease.

Their initiative leveraged the expertise of the Clinical Biochemistry Laboratory combined with their industry partners to develop the methodology of the biomarker tests. In the validation of the assay the Clinical Biochemistry Laboratory collaborated closely with their colleagues in Obstetrics using their extensive bio-library and clinical data tied to the samples. As

part of the validation the laboratorians work together closely with clinicians to update clinical guidelines in order to ensure the end users-clinicians would use the biomarkers results correctly. Once the method of the testing was validated their team performed a clinical trial that demonstrated improved patient outcomes when the test is utilized. Their unified efforts optimized the clinical utility of the information provided from the biomarker tests.

The success of the clinical trials with the assistance of hospital administration helped bring these tests and updated clinical guidelines into routine practice at Oxford University Hospitals NHS Foundation Trust and Nuffield Department of Women’s & Reproductive Health. Linda Holden, a midwife at John Radcliffe Hospital, stated “Having a test that effectively triages patients into high-risk and low-risk groups means we can focus our care more effectively.”

During and subsequent to their work many facilities in the UK have reached out to receive guidance and assistance with implementing both the testing and updated clinical guidelines. They are also facilitating the implementation in other countries including Japan, China, Sri Lanka, Canada, South Africa and Nigeria.

Based on the measurable success of this care initiative a clinical team led at this site became one of the winning teams of the prestigious 2019 UNIVANTS of Healthcare Excellence Program award. This international honor was awarded by leading global healthcare organizations including IFCC, AACC, EHMA, Modern Healthcare, NAHQ, and IHE through leadership and sponsorship by Abbott Laboratories.

THREE KEY TAKEAWAYS:

1. Valued research and cross-functional collaborations are necessary to transform clinical care.
2. Best practices have begun to utilize novel biomarkers to appropriately risk stratify patients at risk of pre-eclampsia to drive transformational change to clinical care.
3. Key performance indicators for the application of novel assays and algorithms into clinical care can include improved patient safety, increased clinician satisfaction, and better resource allocation.



Unified to improve diagnostic pathways and treatment for patients with Acute Kidney Injury: an international best practice from Germany



Pictured from left to right: Jens Ringel, Annemarie Albert, Elisabeth Engelmann, Michael Haase, Saban Elitok

The Diaverum Kidney Care Center MVZ Potsdam affiliated with Otto-von-Guericke University Magdeburg and the Ernst von Bergmann Hospital with the Dialysis Center Potsdam is leading best practices in for kidney disease, with a focus in Acute Kidney Injury (AKI). Acute kidney injury (AKI) is recognized globally as a major determinant of chronic kidney disease (CKD) and cardiovascular mortality. Also, AKI contributes to complications in the hospital with increased costs and length of stay. Long-term consequences of AKI can be severe and may cause fast progression of kidney function decline associated with substantially accelerated atherosclerosis. When AKI is detected early, however, it can be effectively treated, with mitigation of short and long-term complications.

Their Potsdam AKI Care Initiative combines AKI detection at an earlier, actionable stage with implementation of targeted therapy, specialty consultations and patient education to improve outcomes. The champions of this initiative span multiple disciplines and stakeholders with stand-out partnerships among Laboratory Medicine (led by Dr. Elisabeth Engelmann) as well as Nephrology (Dr. Michael Haase, Dr. Saban Elitok and Dr. Jens Ringel) and Internal Medicine (Dr. Annemarie Albert).

The team associated with the Potsdam AKI Care Initiative appreciates that poor recognition of AKI leads to sub-optimal patient management of AKI and its related sequelae. Such management may include treatment changes

such as nephrotoxic drug regimens discontinuation or temporary removal of anti-hypertensive drug therapies. They further recognize that early and effective management AKI can dramatically improve patient outcomes.

As a result, they implemented a hospital-wide electronic AKI alert based on increase of serum creatinine according to KDIGO-AKI practice guidelines for in patients during their hospital stay. Leveraging serum creatinine increase as a screening tool for all patients admitted to the hospital has led to the identification of 4.5% of hospitalized patients with previously undiagnosed AKI. This increase in disease awareness not only empowers clinicians for rapid treatment but enables education to patients on the necessity of managing their health as well. The accelerated detection and treatment pathway (ADTP) consequently reduces AKI related complications (such as hyperkalemia, renal acidosis or edema) by greater than 50%. Before the ADTP was implemented AKI related complications occurred in 4 out of 10 patients and with only 1-2 per 10 patients after implementation.

This process has improved the satisfaction of treating physicians. “Most of my non-nephrologist colleagues and Heads of Department at the Hospital, really appreciate our nephrology service where patients with

AKI are seen, contributing to individualized patient care plans.” comments Dr. Elitok.

The combination of care coordination from varied disciplines, and with measurable improvements, demonstrates the power of unification of healthcare providers across care silos in an avant-garde mode of thinking to improve the quality of healthcare.

Based on the measurable success of this program, this team is one of the inaugural winners of 2019 UNIVANTS of Healthcare Excellence Award Program. This international honour was judged by leading global healthcare organizations including IFCC, AACC, EHMA, Modern Healthcare, HIMSS, NAHQ, and IHE through leadership and sponsorship by Abbott Laboratories.

THREE KEY TAKEAWAYS:

1. Opportunities for improving the detection and treatment of AKI are possible.
2. Best practices that leverage delta analysis of serum creatinine with patient engagement can drive transformational improvements to clinical care.
3. Successful efforts including key performance outcomes from the Potsdam Kidney initiative have included enhanced patient awareness, improved patient outcomes, increased clinician satisfaction, and reduced healthcare costs.



Avant-garde liver function testing, leading a best practice charge from Dundee, Scotland

The University of Dundee and NHS Tayside Ninewells Hospital and Medical School are leading best practices for liver disease testing with innovation and implementation of an Intelligent Liver Function Test (iLFT). Their approach is novel and can be life-saving, especially since a large proportion of chronic liver diseases can be prevented or cured, if detected and acted upon early. According to Ewan Forrest MD (Consultant Hepatologist and Honorary Clinical Associate Professor, Glasgow Royal Infirmary and University of Glasgow), “Early detection of liver disease reduces patient risk of premature mortality with immediate treatment and early disease management.”

Their best practice for liver function testing involves IT-enabled algorithms as well as an integrated multi-disciplinary care team. Their integrated care team includes stakeholders from Laboratory Medicine (led by Drs. Ellie Dow, Jennifer Nobes and Elizabeth Furrie), Hepatology (Dr. Michael Miller and Dr. John Dillon), and Laboratory IT Services (Mr. Ian Kennedy). The interdisciplinary approach enables effective integration into the workflows of patient care and creates better care coordination throughout the patient experience.



Pictured from Left to Right: Jennifer Nobes, Elizabeth Furrie, Ian Kennedy, Michael Hugh Miller, John Dillon, Ellie Dow

Their team recognizes that liver function tests (LFTs) are often the first indication of liver dysfunction and are an “incidental” finding in studies that are performed in the exploration of undifferentiated illness or in monitoring of non-hepatic long-term health conditions. They appreciate that when abnormal LFT results are noted and action is taken, the next steps often involve non-invasive testing, such as ultrasound examinations. Unfortunately, such additional testing may leave the findings unresolved, causing patients undue stress and possibly failing to identify patients who are truly in a hepatic disease state.

Their solution leverages the capabilities of the laboratory information system with minimum diagnostic criteria, automated analyzers and liver fibrosis markers with high negative predictive values to create an intelligent response to abnormal LFT results. The algorithms were designed specifically to amplify clinical judgement in determination of both the etiology and appropriate clinical care pathway for patients who have findings of abnormal LFTs. The algorithms can

trigger (reflex) additional testing upon finding abnormal results for the initial LFTs. Collectively, the results are used to identify a relevant diagnosis and management plan, which is then automatically sent to the general practitioner (GP) in real time.

The interpretation of abnormal LFTs is challenging in the primary care setting where high workloads and comorbidities often obscure the focus on a single condition clinical pathway. The iLFT solution delivers an answer to the pressing need to risk stratify patients with abnormal LFTs, allowing effective escalation of care. It does this in a manner that minimizes the inconvenience to patients by performing the appropriate etiologic testing cascade automatically on the original sample, decreasing the need for the patient to receive multiple blood draws and multiple ‘touch points’ with GPs. The implementation of the iLFT reduces the number of avoidable visits to the GP due to abnormal LFT findings by 85%. Dr. John Dillon stated, “The benefit of predictive algorithms with real-time management plans enables rapid treatment

for patients that may have previously been lost to care gaps without follow-up. It brings me great pleasure to know that we are giving our patients the best possible care.”

The use of iLFT is associated with an increase in detection of liver disease by 43% for patients with abnormal LFT results. This increased detection is associated with increases in appropriate escalation of care, from 41% (prior to iLFT implementation) to 100% (after iLFT implementation) Clinicians diagnose and implement treatment plans earlier, leading to cost savings in healthcare overall. Dr. Neil Greig comments “iLFT harnesses advances in laboratory automation and technologies to ensure that from a single request, clinicians are alerted to the fact that not only their patient may have liver dysfunction but what the cause of that dysfunction might be. The automation of this process not only has the potential to speed up diagnosis of

liver disease but also to reduce unwarranted variation in clinical practice and test utilization.”

The measurable success of this team and program has led to improved healthcare and widespread interest across the globe. This site was also recognized as one of the three prestigious winners of the 2019 UNIVANTS of Healthcare Excellence Awards.

THREE KEY TAKEAWAYS:

1. Opportunities exist for improving the detection and treatment of liver disease.
2. Best practices have begun to leverage the capabilities of laboratory information systems to appropriately reflex additional testing to drive transformative change to clinical care.
3. Key performance indicators of the iLFT algorithm included improved patient outcomes, increased clinician satisfaction, and better resource allocation.

The 30th World Congress of World Association of Societies of Pathology and Laboratory Medicine 2019 WASPaLM

 Xi'an | September 19-21, 2019 Xi'an, China



View point article: how AI will change work and careers in lab medicine?

by Dr. Bernard Gouget

*Chair, IFCC Committee on Mobile Health and Bioengineering
in Laboratory Medicine (C-MHBLM)*

*President - Healthcare Division Committee - Comité Français
d'accréditation (Cofrac)*

Past-Chair, IFCC Nominations Committee (NC)

Co-Chair IFCC TF on History

SFBC - International Committee

*EB member of the International Francophone Federation
of Clinical Biology and Laboratory Medicine (FIFBCML)*



Bernard Gouget

Artificial Intelligence (AI) is a quickly-expanding research field that is at the heart of lab medicine of the future. Beyond the concrete applications that have already been integrated into everyday life, AI makes it possible to process data, provides a great deal of heterogeneous knowledge and helps in understanding complex and abstract rules in the same way as human intelligence but without the involvement of thereof.

AI combines two properties, self-learning through the successive and repetitive processing of data, and adaptability, i.e., the possibility for a coded program to process multiple situations that can vary over time.

AI is already applied to various types of data: textual data, such as medical reports, laboratory testing with biomarkers, genetics or even in radiology, thanks to big data, with task shifting in interventional imaging.

It opens up promising prospects: improving the earliness, speed and relevance of diagnosis, detecting side effects, personalizing therapies, predicting the progress of a disease, optimizing biological and pharmaceutical research or improving patient monitoring and quality of life via connected objects, smart prostheses and assisted surgery.

AI coupled with robotics will lead to the emergence of partially autonomous tools endowed with high precision.

The spectacular acceleration of developments and successes of AI has been initiated to a great extent by the availability and ease of access to large quantities of data of all types, and by large storage and computing capacities, internally or in the cloud. There is clearly a mirror effect between the

development of AI solutions and setting up a robust and sustainable information architecture. One does not happen without the other. AI enriches the information system with new data and allows hierarchizing the importance of information.

Moreover, ethical and transparent AI reveals possible biases and corrects for them by suggesting new data to integrate into the information system.

AI is a key technological building block in digital transformation. The key question is knowing whether AI represents a technological breakthrough such that work will be transformed abruptly, with major repercussions on employment, or if it is part of the continuity of the digital transformations that have been going on for several decades.

While AI raises fears because of the increased automation of work, it is also a technology that provides productivity gains and is therefore a source of wealth that promises to put an end to the most tedious tasks.

Article continued on next page

It can improve coordination processes between the various healthcare actors, optimize production flow and allow a better quality of care. It will also change the boundaries between the health professions.

While some people fear a devaluation of skills and loss of independence, on the contrary, new professions will emerge with improved working conditions.

This is an opportunity for free time and adding value to relational activities between providers and patients, and to further benefit from the advantages of scientific search engines. AI is a formidable opportunity to innovate and create the healthcare of tomorrow, based on the search for excellence.

The degree to which AI will spread in professional practices obviously depends on its costs and the profitability of its impact on provider teams and will also rely on the extent of the demographic and regulatory context, social acceptability, education level, available skills and economic context.

The impacts of artificial intelligence may be exerted on both the volume of jobs and the contents of the work since it is no longer a question of increasing physical strength, agility or speed, as in prior industrial revolutions, but rather performing cognitive tasks.

The effects of AI on qualifications are complex and will depend on organizational choices: advanced automation or human-machine complementarity. This will influence the skills that are indispensable to the development of laboratory medicine.

If we do not commit major and concerted efforts now, in terms of training, we risk seeing the appearance or widening of a massive disconnect between demand and supply tomorrow. In the digital era, human capital is the key to competitiveness.

Educational and training systems must evolve to adjust to new skills. Artificial Intelligence will be able to make the education more efficient and engaging,

facilitating more customizable approaches to learning both for professors and students.

The online education systems will learn as the students learn, understanding their needs and supporting them with a tailor-made itinerary.

Also, learning analytics will accelerate the development of new tools for personalized education and with the use of technologies powered by Artificial Intelligence, the problem of a “one-size-fits-all” approach to teaching will be finally solved. So, we have to start considering AI in education as a lifelong learning companion.

Cross-sectional skills appear to be increasingly important to ensure the human-machine interface.

The use of AI will continually increase the level of technical skill of the specialist in lab medicine, specialist insofar as they can fully exploit the most current clinical knowledge and medical practices. This increase in skills will be even more necessary as specialists in lab medicine also need to be able to challenge the software and take full responsibility for explaining the diagnosis and therapeutic management.

As part of its work, the IFCC Committee on Mobile Health and Bioengineering in Lab Med (C-MHBLM), in coordination with the Emerging Technologies Division executive committee (EC-ETD), wished, in its prospective work program, to integrate and to anticipate the effects of AI on employment and qualifications in laboratory medicine and support the laboratory medicine community in anticipating the needs for new skills.

There is a need for the emergence of new talent to produce AI with advanced skills and to communicate on the technical, legal, economic and ethical challenges of using AI-based tools while paying attention to securing the career paths that are greatly impacted by automation and AI and is likely to fundamentally renew the way medicine is practiced and care systems are organized.

NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES



News from Mexico

2nd Seminar on Quality: Towards Laboratory Accreditation



by Rosa Sierra-Amor

Member WG eNews

IFCC EB Regional Representative

The 2nd Seminar on Quality: *Towards laboratory accreditation* was organized by the Mexican Association of Clinical Laboratory Sciences, IFCC Full member society in collaboration with BIO-RAD MEXICO.

It took place in Mexico City at the Faculty of Veterinary, Mexican Autonomous University of Mexico (UNAM). The program included four lectures, from *Good Laboratory Practices, Regulations and Standards in the Medical Laboratory and Blood Bank, the Process to achieve Technical skills in Laboratory performance, and Quality control in Clinical Laboratory Sciences*. On-site 109 attendees, along with 234 by internet-based connection from Colombia, Ecuador, Dominican Republic, El Salvador, Chile and Texas US.

Photo on the left: Prof. EBC Ana Margarita Zavala-Ortiz, from the Faculty of Chemistry at the UNAM in Mexico City, where she teaches statistics and quality control subjects at graduate and post-graduate level. Her presentation reinforced the need to develop “good laboratory practices” from the beginning to comply with regulations and fulfill the requirements of international standards.

Photo on the left: Angel Fernando Galval-Garcia, Magister in Public Health and researcher on Quality and Healthcare standards from the National Institute of Public Health in Cuernavaca, Morelos focused his talk on the importance of knowing the national and local regulations, to participate at committees and working groups, encouraging professionals to learn all regulations. As literature refers, more than 70% of laboratory results are used for clinical diagnosis, therefore, the participation of professionals in developing national and international standards is a key factor to improve healthcare guidelines and standards in general.

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Photo on the left: QBP Victor Baltazar-Escobar, who is assessor in management and analytical quality, member of the National panel of Laboratory accreditation at the Accreditation Entity in Mexico and also Deputy secretary of the Mexican Association of Clinical Laboratory Sciences, who spoke about the qualifications and continuing education that laboratory professionals must have to work according to those standards. On-site verification of laboratory personnel is essential to demonstrate that they have the skills to do laboratory work.



Photo on the left: Francisco Joaquin Acevedo-Barranco, Magister in Quality and Applied Statistics, QSD Product Specialist clinical Diagnostics Group from BIO RAD spoke about the importance of internal and external quality control parameters to demonstrate how laboratories performed precision and accuracy, using Westgard's rules and other quality tools to estimate the level of errors in the clinical laboratory which are key factors to improve quality. The final stage is to achieve international standards, where ISO 15189 is the one to follow in order to have worldwide recognition.

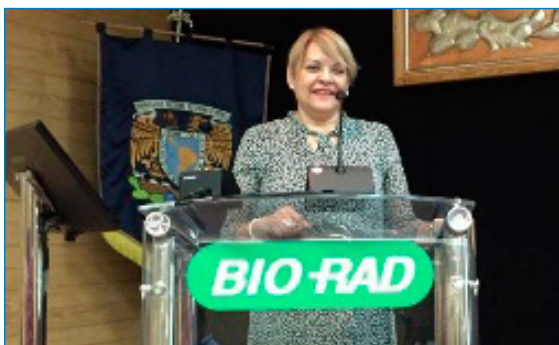


Photo on the left: A Round table discussion was chaired by Jezabel Vite, Magister in Education, president of CMCLabC to summarize the discussion and to thank the organizations involved, encouraging everyone to promoting laboratory and blood bank continuing education programs where both IDV and laboratory professionals participate for the good of the patient. BIO RAD Mexico looks forward to future activities to promote accurate knowledge.



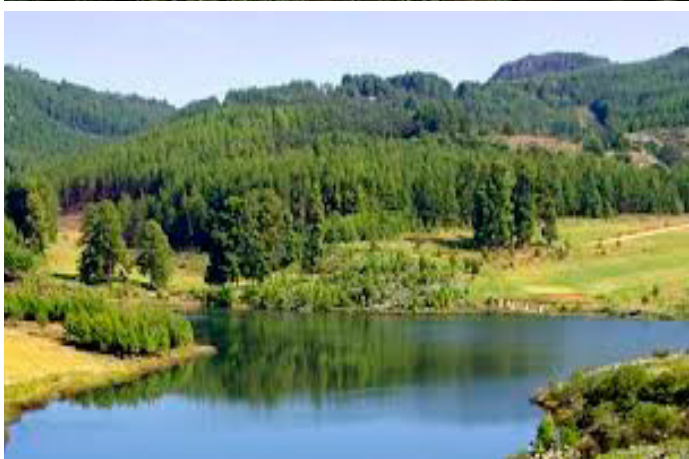
Auditorium audience at the 2nd Seminar on Quality in Mexico City



News from Zimbabwe

AFCC LabMed-ZACB Flash News

by Hilda Tendisa Marima-Matarira
ZACB President
Chitungwiza Central Hospital
Avondale, Zimbabwe
e-mail: matarirah@yahoo.com



Prof. Hilda Tendisa Marima-Matarira

Hello World, this is AFCC LabMed Internet Radio - ZACB Flash News. The 1st of July 2019 was a historic day when Professor Hilda Tendisa Marima-Matarira was appointed as the Board Chairman of Chitungwiza Central Hospital (CCH), the only ISO certified central hospital out of 5 such hospitals in Zimbabwe.

CCH is one of the five Central Hospital in Zimbabwe situated 30km south east of Harare. It looks after 3 million population from part of Manicaland Province to Mashonaland East Province.

In Mashonaland East Province, there are other hospitals under CCH. These are Marondera Provincial Hospital and Mahusekwa District hospitals plus many clinics. In Chitungwiza Central Business District (CBD), there are 4 clinics. These are St Marys, Zengeza, Seke North and Seke South. The central business district has some 400,000 plus population.

Article continued on next page

Chitungwiza Central Hospital delivers the highest number of babies in Zimbabwe per month @ 600 babies, but it has no maternity hospital. Top on the list of priorities of Prof. Matarira is to build via Private Public Partnership (PPP) a super special maternity hospital.

CCH sets on 17 Ha and 5 Ha of which has already been built. On the 12 Ha site plans to build a super specialties hospital are approved and now available. It will be a centre of excellence as a national supra referral hospital that will also attract Medical Tourism facilities in SADC and beyond. The hospital will have 7 floors, an additional 500 beds in addition to the current 500 beds. There are about 100 Doctors, 550 Nurses, plus 650 others are working in Chitungwiza Central Hospital.

We expect that the hospital will maintain an ISO certified status very soon. All these structures will also include 600 000-liter water tank solarisations of CCH and provision of 5 ambulances.

Thank you for taking time to read this article.



News from the Lebanese Society of Clinical Biology (SBL)

New President of SBL

The Lebanese Society of Clinical Biology is happy to announce that Dr. Myrna Germanos Haddad has been elected the new President of the Syndicate.

Dr. Christian Haddad, Past-President, is still an active member of the Board.



Dr. Myrna Germanos Haddad



News from the Spanish Society of Laboratory Medicine (SEQC^{ML})

SEQC^{ML} headquarters in Barcelona hosts the International Editors Meeting of Lab Tests Online

SEQC^{ML}

Sociedad Española de Medicina de Laboratorio

prepared by the Spanish Society of Laboratory Medicine (SEQC^{ML})

SEQC^{ML} headquarters in Barcelona hosts the International Editors Meeting of Lab Tests Online, in which improvements were agreed to exchange and standardize its contents

- **The Spanish-language website of LTO, promoted by SEQC^{ML}, is considered a success, as it is one of those that attracts the most traffic worldwide**
- **Representatives of the US delegation reported on changes in their Editorial Committee and made their contents available to other delegations**

BARCELONA, AUGUST 21, 2019

In May, the International Editors Meeting of Lab Tests Online (LTO) was held at the headquarters of the Spanish Society of Laboratory Medicine (SEQC^{ML}) in Barcelona. This website, whose Spanish-language edition is run by SEQC^{ML}, provides the general public with rigorous information about more than 1,200 analytical tests, as well as news and other resources.

The International Editors Meeting held in Barcelona was attended by representatives from the United States, Poland, Czech Republic, Brazil, Greece, Hungary, and Spain. The Spanish team was made up of Marina Canyelles, Mariano Cortés, Patrocinio Chueca, Ramón Deulofeu, Chelo Fernández, Maite Panadero, Carlos Sisternas, and Laura Valls.

During the meeting, described as “very productive”, attendees discussed the new contents to be developed during 2020 in the different international LTO portals. Likewise, new editorial guidelines were created to standardize the content of these international sites, and an update was provided on the status of the different countries’ websites.

More detailed reports on the specific cases of Poland and Spain were presented at the meeting. The website of our country is considered a success, as it is one of the ones that attracts the most traffic globally - about 350,000 unique users per month during the year 2019 to date, with an increase of 25% in relation to the previous year.

In this regard, the activities carried out by the Spanish Editorial Committee to invigorate the website were reviewed, such as the eight new articles and 24 resources for patients that were published on the Spanish site throughout 2018 to complement the information provided on clinical analysis. Also mentioned were social media posts, with an increase in Facebook and Twitter users of 83% and 360%, respectively, over the past year. The launch of the photographic contest ‘Photography of emotion’, aimed at LTO users, was also highlighted.



Laura Valls, member of the Editorial Board of LTO Spain during the presentation of the results

Article continued on next page

INTERNATIONAL CONTENTS

Among other operational and legal aspects, the International Editors Meeting of LTO approved recommendations such as each site submitting to the others a monthly summary of the updates and revisions made. It was also agreed to centralize in Ellen O'Connell, North American representative, all the suggestions for new articles and other contents for the year 2020 that are developed by the North American delegation, and that the US will share their editorial indications with the other countries.

Also in relation to the USA, their representatives reported on the election of Dr. Christine Snozek as Scientific Editorial Director of LTO USA, replacing Robert Dufour, who has been carrying out this task since the beginning of the website.

Documents were also distributed during the meeting with the updated principal editorial recommendations and some examples of standard answers for the most common user questions. Likewise, some criteria were established regarding brand image, such as

updating logos and withdrawing references to currently inactive sites.

The Spanish Society of Laboratory Medicine (SEQC^{ML})

The Spanish Society of Laboratory Medicine (SEQCML) - founded in 1976 - currently encompasses more than 2,500 professionals, and its main objectives are to bring together all scientists interested in the field of Laboratory Medicine, promote the dissemination of scientific and technical publications, organize meetings, courses and congresses of national and international character, cooperate with other Scientific Societies, and defend and promote the specialties of the field of Laboratory Medicine as well as those of its members. Likewise, the Society wishes to contribute to studying and recommending methods and guides, and to establishing guidelines and recommendations for training in the field of Laboratory Medicine. For more information: www.seqc.es.



Group photo of the members from different countries attending the meeting

Once upon a time... at LABAC!



Jean-Marc Giannoli, LABAC President

LABAC members are very active within the Cofrac, the only one Accreditation Body in France created in 1994. Accreditation is a mandatory approach and it is recognized as an activity of public authority and general interest in France. Members of the association have to prove their skills to earn the accredited status and the Cofrac Logo. Technical experts qualified by Cofrac and recognized in their field, do the audit for several days, evaluate the level of competence of all staff, verify the validation of analytical methods and procedures and the relevance of the equipment used.

All LABAC members have implemented a quality assurance process to validate, control and ensure the traceability of all their activities, being very proud to succeed at Cofrac accreditation for more than 50% of their activities at the end of 2017. These solid results allowed to look to the future of the association with serenity, positioning the Patient first, with a culture of always strive making lab medicine better as it could be, which is a daily LABAC' members challenge.

by Jean Marc-GIANNOLI

President LABAC

Member-Cofrac accreditation commission (CAC)

Jean-Pierre BOUILLOUX

LABAC Treasurer

Member-Cofrac accreditation commission (CAC)

Corresponding Member EFLM-WG-preanalytical phase

Bernard GOUGET

President-Healthcare Division Committee

Comité Français d'accréditation (Cofrac); Chair, IFCC-CMHBLM

The French association of accredited laboratories, LABAC, is an IFCC/EFLM Affiliate member since 2018. LABAC brings together medical biologists with a medical or pharmaceutical background practicing in private medical laboratories, in general or university hospitals or in other institutions (CEA (Atomic Energy Commission, Reference and Research Centers, military hospitals, representatives from the IVD industry, etc.). This scientific organization has a national representation in France. The members are representing today 314 legal structures of medical labs spread over the whole French Nation (see figure1) of a total of 849, and 2390/10453 medical biologists working in the whole country.

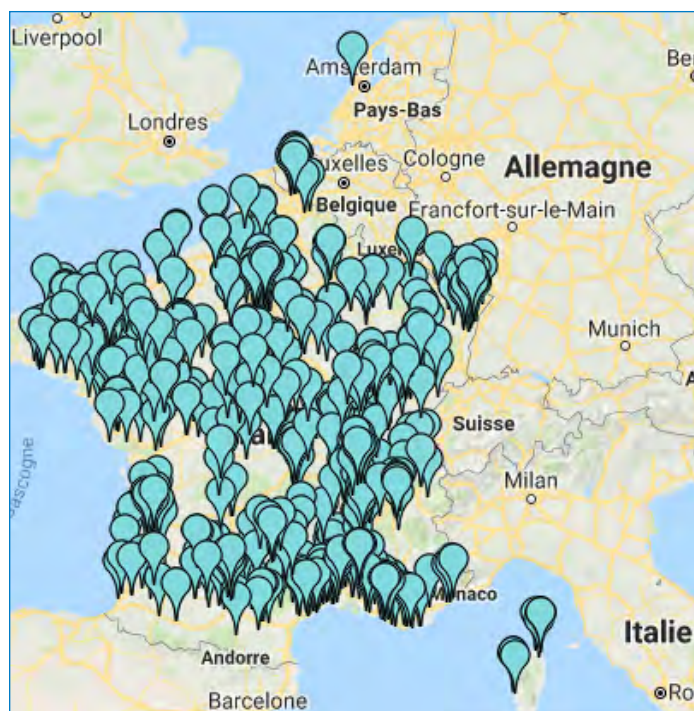
LABAC members are also engaged in the committee section and accreditation technical commission of the Cofrac Human Health Care Division headed by Hélène MEHAY. Several of them are NF EN ISO 15189-2012 technical assessors. In France the consolidation of the medical labs is progressing rapidly. The LABAC input is important to continue the process of optimization of actions and in particular, the redefinition of the accreditation scopes for better visibility of the competences involved and simplification of the accreditation application record.

Internationally, LABAC is actively participating in various activities, as per example, the drafting of the new version of ISO 15189 standard at the ISO Technical Committee 212 on clinical laboratory testing and in vitro diagnostic test systems. They were also present at different EFLM/IFCC events (Labquality days 2018, Helsinki (FI); EFLM conference on Pre-analytical Phase, Zagreb, March 2018 (CR), IFCC General Conference Budapest 2018 (HU); 5th EFLM-UEMS European

Joint Congress in Laboratory Medicine, Antalya (TU); EuroMedLab Barcelona 2019 (SP) to share experiences and develop new skills in collaboration with EFLM/IFCC partners.

Like any scientific organization, LABAC established several working groups aiming to promote good practices and quality indicators. They recently translated in French the Joint EFLM-COLABIOCLI Recommendation for venous blood sampling v 1.1, June 2018 and they wrote an English version of the French Technical Guide to Medical Laboratory Accreditation, SH GTA 01-Cofrac. In collaboration with other scientific societies, they organized consensus conferences in microbiology and on internal and external quality control and uncertainty. A French guideline on general terms in metrology and guide to the expression of uncertainty is under review.

To support and strengthen the EFLM/IFCC international network, LABAC designs every year thematic workshops and specialized seminars. The last one, in June 2018, was on the “Application of Temperature Metrology in Laboratory.” It has been designed for laboratory professionals providing guidelines on how to operate the metrology of temperatures and other physical parameters in the laboratory.



Distribution of LABAC members in France

Twice a year, LABAC organizes a congress with the participation of International speakers (in 2017: Pr. Greg MILLER, AACC President 2012 and CLSI, in 2018: Pr. Svere SANDBERG, EFLM President 2016-2017). Last May 16th, the morning session of the Spring Congress 2018 was dedicated to “Six Sigma in hematology” with three invited speakers: Hans VAN SCHAIK (NL) who spoke about “the application of TEa and Six-Sigma to hematology parameters”; a topic on “Performance evaluation and QC planning using Six Sigma” was presented by Hassan BAYAT (Iran), followed by Addurrahman COSKUN’s (Turkey) presentation on the “Application of Six sigma in quality assessment of hematology and coagulation tests”. A lively, heated and lengthy discussion concluded debates about the pro’s and con’s!

The next 2019 congress will be held on October 1st at the “Maison de la Chimie”, 28 rue St Dominique, Paris 75007 (<https://maisondelachimie.com/>), in presence of Pr. Maurizio FERRARI, IFCC President, Pr. Tomris OZBEN, EFLM President elect. It will be dedicated to “Quality management and quality control”, with the participation of Pr. Mario PLEBANI (IT), special guest speaker, Dr. Curtis PARVIN (US) and Pr. Tony BADRICK (AU). Pr. Nader RIFAÏ, as guest of honor, will present a Key note lecture on: “Communication of scientific and educational information in laboratory medicine; Innovative approaches and tools»*. English/French and French/ English translation will be available all day long.

Jean-Pierre BOUILLOUX, LABAC treasurer and Corresponding member at EFLM-WG on Pre-analytical phase, already planned a program of the next International Hemolysis conference, on April 9th 2020, at the same venue, Maison de la Chimie, Paris. This conference will be an opportunity to welcome Pr. Anna-Maria SIMUNDIC, succeeding EFLM President and Pr. Giuseppe LIPPI, Chair EFLM WG-Pre, and EFLM WG-Pre members, corresponding members and expert/consultant as well as Laura SCIACOVELLI, Chair IFCC-WG on Laboratory errors and patient safety (WG-LEPS).

We look forward to welcoming everyone in Paris to share experiences and envisioning the future of laboratory medicine together! More information on the IFCC website: https://www.ifcc.org/media/478005/labac_programme_conference_10-2019.pdf.



News from Panama

The Clinical Laboratory in Panama has many specialities and also devotes to investigation

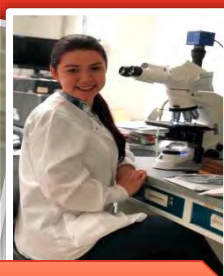
CLINICAL LABORATORY IN PANAMA 2019



MGTR. JOSE MORENO (ICGES-
LCRSP) PIC. 1



DR. AMADOR GOODRIGE
(INDICASAT) PIC. 2



LICDA. MILAGRO DIMAS
(CHAAM) PIC. 3



MGTR. LIZBETH CAMPILLO
HOSPITAL DEL NIÑO PIC. 4



MGTR. MAURA BALLESTEROS -
THE BLOOD BANK HOSPITAL
SANTO TOMAS PIC. 5
(ICGES-LCRSP) PIC. 1

Panama has research centers such as the Institute of Scientific Research and High Technology Services (INDICASAT) of Panama, Gorgas Memorial Institute of Health Studies (GORGAS-ICGES) and Hospitals of complexity V.

Among the achievements of these research centers where prominent Medical Technologists work there are:

- Carlos Slim Awards in Health 2019, “for its scientific research for the benefit of people in the region”: winner in the category of “Exceptional Institutions”.
- Slim Foundation Publication: detection of the re-introduction of dengue in Panama in 1993; discovery of the cause of Hantavirus Pulmonary Syndrome in 1999; isolation of the AH1N1 influenza virus in 2009; first report of an outbreak of equine encephalitis (E.E.) in humans with the coexistence of two viruses (Eastern E.E. and Venezuelan E.E.) in 2010.
- Study of genetically modified mosquitoes in 2014; development of a geographic information platform for vector surveillance in 2016; and development of a new treatment for Leishmaniosis in 2017.
- INDICASAT, created in 2002 by the National Secretariat of Science, Technology and Innovation (SEN-ACYT) to promote the development of science in Panama. INDICASAT-AIP carries out work in scientific research, clinical trials, and provision of services in water analysis. The institute has the following research areas: Natural Products Chemistry, Biotechnology, Immunology, Neurosciences, Pharmacology, Toxicology, and Parasitology. Clinical trials are carried out in collaboration with drug and vaccine development companies to study vital aspects of new products, such as their effectiveness, safety, etc. Additionally, the insti-

tute has the ability to provide several specialized services in areas of Chemistry and Biology, such as water analysis, detection and molecular characterization of pathogens, among others.

We are happy to present below the work of outstanding Medical Technologists.

Picture 1:

Mgtr. Jose Moreno: part of the team working in the Central Reference Laboratory in Public Health, of the Gorgas Memorial Institute of Health Studies (ICGES). This Central Reference Laboratory was accredited according to the international certificates of ISO 15189: 2012, for the test: "Typification of the Mycobacterium tuberculosis Complex by immunochromatography" granted by the Guatemalan Accreditation Office, under the code OGA-LE-68-16. This process was funded by the Ministry of Economy and Finance, and the Under secretariat for Preparedness and Response (ASPR) Department of Health of the United States and with technical advice from the Laboratory Management Strengthening Program (FOGELA) in collaboration with the Council of Ministers of Health of Central America (COMISCA), the Center for Disease Prevention and Control (CDCCAR), and The Ministry of Health of Panama. This scope has been extended to serotyping of somatic and flagellar Salmonella, resistance for tuberculosis by Western Blot and Leptospira.

Picture 2:

Dr. Amador Goodridge, along with the Tuberculosis Biomarker Research Unit of INDICASAT-AIP in the City of Knowledge, Panama, conducts research on new methodologies for the detection, treatment monitoring and prognosis of pulmonary and pleural tuberculosis. His research concerns new tools for diagnosis of bovine tuberculosis and paratuberculosis and their impact on the productivity of the livestock sector in Panama. His team of researchers has focused on the study of the social determinants of latent tuberculosis infection among health care workers and contacts of patients with tuberculosis. These works have been key for the implementation of the interferon gamma laboratory test in the epidemiological surveillance

algorithms of tuberculosis nationwide. More recently, Dr. Goodridge and his team investigate the diet and nutritional behavior among people affected with Tuberculosis and HIV.

Picture 3:

Licda. Milagro Dimas: she is in charge of the area of tuberculosis within Microbiology, they cultivate with manual methods and using liquid media on MGIT around 300 specimens per month. CHAAM (Complejo Harmodio Arias Madrid) is the largest laboratory in Caja de Seguro Social: it is the main lab of 52 laboratories of the institution, including a transplant, histology, genetics, cytology and special hematology lab.

Picture 4:

Mgtr. Lizbeth Campillo: she works in the Department of Pathology that provides diagnostic services (surgical pathology) of biopsies, surgical pieces and cytology, hospital, outpatient and hospitalized patients, and extra-hospital cases treated by the Medical Directorate. Autopsy studies practices of hospital deaths and extra-hospital deaths authorized by the Medical Directorate. Mgt. Campillo is in charge of the largest pathology lab in a Children Hospital. They work with special immunohistochemical stains for tissue like PAS, Ziehl-Neelsen, mason, mucicarmine. Immunohistochemical for antibody detection of CD3, CD20, CD68 for prognosis through biopsies and types of tumors.

Picture: 5

The Blood Bank: it is the center responsible for the collection, processing, storage and distribution of blood and its blood components and therapeutics. In Panama we participate in external quality control programs for serological and immunohematological tests and we carry out hemocomponent control programs. Some of the tests implemented are: adsorption and elution of antigens and antibodies, nucleic acids for the detection of HIV RNA, HCV RNA and HBV DNA. Voluntary blood donation is promoted through collections in schools, institutions and companies. Mgtr. Maura Ballesteros actively participates in the Hemocenter implementation processes in Panama.

IFCC WorldLab **SEOUL 2020**

24th INTERNATIONAL CONGRESS OF
CLINICAL CHEMISTRY AND LABORATORY MEDICINE

May **24-28**, 2020
Coex, Seoul, Korea



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IFCC'S CALENDAR OF CONGRESSES, CONFERENCES & EVENTS

Calendar of IFCC Congresses/Conferences and Regional Federations' Congresses

Sep 26 - 28, 2019



AFCC Regional Congress

Marrakesh, MA

Calendar continued on next page

Nov 17 - 20, 2019		<i>APFCB Regional Congress 2019</i>	Jaipur, IN
May 22 - 24, 2020		<i>International Congress of Pediatric Laboratory Medicine - WorldLab Seoul 2020</i>	Seoul, KR
May 24, 2020		<i>IFCC C-POCT Satellite Meeting - WorldLab Seoul 2020</i>	Seoul, KR
May 24 - 28, 2020		<i>XXIV IFCC WORLDLAB SEOUL 2020</i>	Seoul, KR
May 29 - 30, 2020		<i>IFCC - ICHCLR Workshop on reference materials and regulations for global standardization of clinical laboratory testing</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 of events with IFCC auspices

Feb 25 - Dec 31, 2019	<i>Bolivian Continuing Education Program (PROBOECO) of the Bolivian Society of Clinical Biochemistry</i>	Different cities, BO
Jun 3 - Oct 30, 2019	<i>Distance Training Workshop for University Teachers</i>	Online Event
Jun 5 - Dec 24, 2019	<i>Postgraduate course of analytical quality in the clinical laboratory</i>	Online event
Sep 19 - 21, 2019	<i>The 30th World Congress of World Association of Societies Pathology and Laboratory Medicine (WASPaLM 2019)</i>	Xi'an, CN
Sep 22 - 24, 2019	<i>XIV Congress of Czech Society of Clinical Biochemistry</i>	Plzen, CZ
Sep 24 - 26, 2019	<i>Cardiac Biomarkers Symposium - High Sensitive Troponin: Present and Future</i>	Tel Aviv, IL
Sep 25 - 27, 2019	<i>Congreso Nacional Bioquímico CUBRA XV 2019</i>	Chaco, AR
Sep 25 - 27, 2019	<i>Flow cytometry course for immunohematological malignancies</i>	Moscow, RU
Sept 25 - 29, 2019	<i>16th Annual Meeting of the DGKL e. V.</i>	Magdeburg, DE
Sept 26 - 28, 2019	<i>LMCE 2019 and KSLM 60th Annual Meeting</i>	Busan, KR
Oct 1, 2019	<i>41st Conference LABAC</i>	Paris, FR
Oct 1, 2019	<i>Symposium on autoimmunity: advances in the laboratory and clinical practice on the adoption of ICAP in Chile</i>	Santiago, CL
Oct 2 - 5, 2019	<i>4th Advances in Circulatory Tumour Cells (ACTC) Meeting, Liquid Biopsy: Latest Advances and Future Challenges</i>	Corfù, GR
Oct 3 - 4, 2019	<i>CELME 2019</i>	Prague, CZ
Oct 3 - 5, 2019	<i>XII Congress of Clinical Biochemistry</i>	Montevideo, UY
Oct 8 - 10, 2019	<i>5th National Congress SIPMeL – The Centrality of Laboratory Medicine in the Diagnostic Process</i>	Riva del Garda, IT
Oct 15, 2019	<i>SZKKLM 8th International Conference on Quality of Medical Laboratories</i>	Ljubljana, SK
Oct 16 - 18, 2019	<i>5th ESPT Congress – Precision Medicine and Personalized Health</i>	Seville, ES
Oct 23, 2019	<i>From Bench to Diagnostic-Therapeutic Pathways - Symposium dedicated to the memory of Professor Angelo Burlina</i>	Padua, IT

Calendar continued on next page

Oct 23 - 25, 2019	<i>20th Congreso Chileno de Quimica Clinica y Ciencias del Laboratorio</i>	Santiago, CL
Oct 27 - 31, 2019	<i>The Joint Congress of 27th Balkan Clinical Laboratory Federation (BCLF) Congress and 30th National Biochemistry Congress (NBC) of TBS</i>	Antalya, TR
Nov 1 - 4, 2019	<i>19 International Congress of the Colegio Nacional de Bacteriologia, CNB Colombia</i>	Bogotá, CO
Nov 6 - 8, 2019	<i>3èmes Journées Francophones de Biologie Médicale</i>	Monaco, MC
Nov 7 - 9, 2019	<i>The Value of Laboratory Medicine into Clinical Medicine</i>	Erice, IT
Nov 16 - 18, 2019	<i>XXVII Congreso Estatal de quimica clinica y Expolab Mexicali 2019</i>	Mexicali, MX
Nov 20 - 22, 2019	<i>Laboratory Medicine in frailty of Laboratory Medicine</i>	Padua, IT
Nov 21 - 22, 2019	<i>Journées de l'innovation en biologie (JIB 2019)</i>	Paris, FR
Nov 21 - 23, 2019	<i>EEKX- KB 17th National Congress of Clinical Chemistry</i>	Athens, GR
Nov 28, 2019	<i>CIRME - 13th International Scientific Meeting - - The Internal Quality Control in the Traceability Era</i>	Milan, IT
Nov 28 - 30, 2019	<i>XIX National Congress of Clinical Laboratory Professionals: Scientific Perspectives to the Technological Advances of the 21st Century</i>	Santo Domingo, DO
Nov 28 - 30, 2019	<i>XI Congreso Guerrerense de actualizacion academica para el desarrollo profesional del quimico clinico y Expolab</i>	Acapulco, MX
Dec 3 - 5, 2019	<i>5th Annual Meeting, Saudi Society for Clinical Chemistry</i>	Riyadh, SA
Dec 6 - 7, 2019	<i>53e JBP, Journées de Biologie Praticienne</i>	Paris, FR
Feb 6 - 7, 2020	<i>International Congress on Quality in Laboratory Medicine</i>	Helsinki, FI
Mar 14 - 16, 2020	<i>XXIII Congreso Nacional para el Análisis de la Garantía de la Calidad en el Laboratorio Clínico</i>	Tuxtla Gutierrez, MX
Apr 9, 2020	<i>42nd Conference LABAC</i>	Paris, FR
Jun 9 - 12, 2020	<i>XXXVII Nordic Congress in Medical Biochemistry</i>	Trondheim, NO
Jul 4 - 7, 2020	<i>24th International Conference on Laboratory Medicine and Pathobiology - An Expert Forum on Innovation in Clinical and Laboratory Medical Sciences</i>	Samos, GR
Sept 28 - Oct 1, 2020	<i>10th Santorini Conference "Systems medicine and personalized health and therapy" – "The odyssey from hope to practice: Patient first – Keeps Ithaca always in your mind"</i>	Santorini, GR

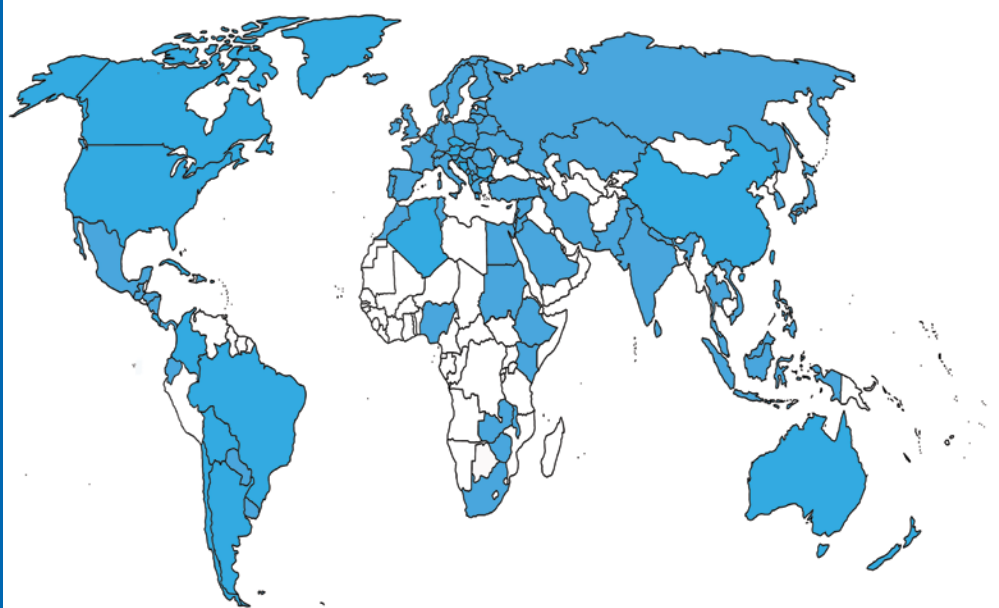
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