APFCB News

The Newsletter of the Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine for circulation among APFCB and IFCC members only

APFCB News
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2025

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Submission

The APFCB News welcomes suitable contributions for publication. These should be sent electronically to the Chief Editor. Statements of opinions are those of the contributors and are not to be construed as official statements, evaluations or endorsements by the APFCB or its official bodies.

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Founding and Past President APFCB

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From the desk of Chief Editor, APFCB News

Prof. Pradeep Kumar Dabla
Chief Editor, APFCB News

Dear Readers,

The APFCB Communication and Publication Committee (C-CP) has remained an instrumental for the activities & advancement of the federation's communication strategies and educational outreach in 2024. Team C-CP, has revolutionized digital engagement while fostering networking channels with its member associations. Key achievements include the launch of a dynamic APFCB website, integrating enhanced tools like the “APFCB Auspices Calendar” and sections dedicated to webinars, guidelines, and corporate partnerships. The committee also revitalized the federation’s presence on platforms like LinkedIn and YouTube, connecting with professionals globally.

The APFCB Webcast & e-Learning Programme, a complimentary certificate programme was launched in 2024 with open platform for APFCB members to propose activities. It hosted two successful networking webinars conducted on “Biomarkers in metabolic syndrome” and “Prevention of lead poisoning”. Sessions saw participation from over 700 Attendees from 40 countries, signifying the federation commitment to disseminating cutting-edge knowledge.

Additional features included in news were expert inputs, special reports, and interviews while achieving DOI registration and improving with ISSN processes increased the credibility of documentation for publications. Looking forward, initiatives in the form of interactive member sessions, special issues of publications & podcasts would further strengthen APFCB's mission.

As we enter 2025, the APFCB wishes all its members, partners, and collaborators a Warm & Happy New Year 2025!

Happy Reading!!
Team APFCB C-CP

From the desk of APFCB President

Dr. Tony Badrick
President, APFCB

Dear APFCB members,

As we begin the New Year, looking back on last year and what we achieved is valuable. 2024 was a big year for the APFCB, with the Sydney Congress and face-to-face Council meeting, the election of a new Treasurer, and the retirement of Elina Raja as Treasurer 2024 marked the culmination of many APFCB committee activities.

There are specific reports about the Congress, but I would like to add my comments. The Sydney Congress resulted from the efforts of many committees over a long period to conceive of a suitable, inclusive program. Then, speakers from the APFCB and the rest of the world came to provide the audience with their insights and experience in lectures, workshops, and informal discussions. The power of face-to-face meetings was evident in Sydney Harbour. This can only happen with the support and commitment of the APFCB corporate members and the industry. They provide the framework of our laboratories. On behalf of the APFCB, I wish to thank everyone who was involved in the conceptualisation, implementation, and delivery of the meeting.

The Council meeting held at the Congress was significant for several reasons. The Treasurer's task is the most challenging task on the Board. We thank Dr Elina Raja for her hard work and leadership over the last two years, which has led to better investment outcomes for our reserves. Elina will still be very active with the MACB planning for the 17th APFCB Congress in Kuala Lumpur in 2026. We welcome Woei-Horng Fang as our next Treasurer. Woei-Horng has been involved with the APFCB and IFCC for many years, most recently as chair of the conference and congress committee of the APFCB. The Council approved a major constitutional change to allow a more manageable transition for the President. The amendment is given below.

Preamble

1. Item 6.3 of the Constitution states that the APFCB President, Vice President and Immediate Past President together with the Secretary, Treasurer and Corporate Representative shall be elected at the council meeting at the APFCB Congress and the term of office shall begin on the First of January following the election to serve for 2 calendar years. The President and Vice President together with the Secretary, Treasurer and Corporate Representative shall retire on completion of the term of office and shall be eligible for re-election for one further (consecutive) term in the same office.

2. This amendment is for a President Elect to be elected at the AGM in place of the Vice President position, to take office on the first of January at the middle of the next term following the election, to serve for one calendar years in order to ensure continuity.

Current content of amended item 6.3 of the constitution

The President, Vice President, Secretary, Treasurer and Corporate Representative shall retire on completion of the term of office and shall be eligible for re-election for one further (consecutive) term in any position on the EB. Officers will be ineligible for election to any office on the Executive Board for one term after the second consecutive term.

Proposed content of amended item 6.3 of the constitution:

A President-Elect will be elected at each AGM, together with the Secretary, Treasurer and Corporate Representative.

The President, having completed a term of two years in office, will take office as Past-President for one year, starting on the first of January of the year following the AGM.

Secretary, Treasurer and Corporate Representative begin on the first of January following the election to serve for 2 calendar years and shall retire on completion of the term of office and shall be eligible for re-election for one further (consecutive) term in the same office.

The President-Elect will commence in that position for 1 year, starting on the first of January at the middle of the next term following the election.

The President-Elect will then transition to the post of President for 2 years automatically, commencing on the first of January of the first year of the following term.

I also want to thank all the members of the APFCB, the Board, the Chairs of Committees and their excellent committee members for all the work they have given to our organisation in 2024.

I wish you all the best for the rest of 2025.

Best Wishes
President, APFCB
Dr Tony Badrick

Report APFCB- Communication and Publications Committee (C-CP), 2024

The Communication and Publication Committee (C-CP) of the Asia Pacific Federation of Clinical Biochemistry and Laboratory Medicine (APFCB) bears the critical responsibility of shaping, monitoring, and refining the organization's communication strategies and online presence. This committee plays an instrumental role in formulating and overseeing system-wide policies, ensuring that all digital operations align with the federation's overarching objectives. It also spearheads the online publication of APFCB News and collaborates closely with member associations and corporate partners to foster broader engagement and dissemination of valuable educational materials and resources to professionals in laboratory medicine. In doing so, the C-CP significantly contributes to the advancement of innovative ideas, guiding member associations in the development of policies and strategies that support the federation's mission of enhancing patient care.

Chair: Dr. Pradeep Kumar Dabla

- **Web Editor:** Dr. Deepak Parchwani
- **Social Media Coordinator:** Dr. Vivek Pant

Members:

- Dr. Ryunosuke Ohkawa
- Dr. Mingma Lhamu Sherpa
- Dr. Alireza Lotfi Kian
- Dr. Mayank Upadhyay (Corporate - QuidelOrtho)

Since the appointment of the current committee, the C-CP has taken proactive steps to enhance the federation's online visibility through the APFCB e-newsletter, social media platforms, and the official website. Over the past year, the committee has maintained robust communication channels and employed digital tools to promote the APFCB's activities across member societies within the Asia Pacific region and beyond, reaching countries affiliated with the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

Key Activities and Achievements:

1. **Regular APFCB Website update**

   The C-CP has overseen the creation, maintenance, and management of a new, dynamic APFCB website. This platform is regularly updated with the latest information on webinars, online courses, and virtual conferences hosted by APFCB, its member societies, and other international professional bodies. The website also features scientific publications, guidelines, and webinars (both live and recorded) on various topics of interest.
   Significant enhancements have been made to the website, including improved webinar visibility, the addition of a quick link tab for APFCB Auspices on the homepage, upgraded sections for announcements, social media integration, visitor statistics, and a dedicated space for corporate partners.

   The "APFCB Auspices Calendar" has been meticulously organized, reflecting the federation's commitment to fostering communication and information exchange in the field of laboratory medicine, which is essential for advancing patient care.

2. **Active mode of APFCB Social Media Platforms:**

   Recognizing the pivotal role of social media in modern communication, the current C-CP has established new social media profiles and revitalized existing ones to effectively disseminate information regarding APFCB activities. The federation is now actively updating the events and news on Facebook, Twitter, LinkedIn, Instagram, and YouTube, allowing it to reach a broader audience and engage more effectively with national societies and clinical laboratory professionals.

Social Media Links:

- Facebook: https://www.facebook.com/APFCB/
- Twitter: https://twitter.com/APFCB_LM
- Instagram: https://www.instagram.com/apfcb_lm/
- LinkedIn: https://www.linkedin.com/company/apfcb/
- YouTube: https://www.youtube.com/channel/UCoiicTsnVX-COjklgZHQ54Q

3. **Promotion of Educational and Federation Activities:**

   The C-CP has utilized the APFCB website and social media platforms to publicize upcoming events. Members are notified of impending events through blast emails, ensuring broad participation. The committee continues to diligently update and expand its member database to enhance communication and engagement.

4. **Publication of APFCB News:**

   The C-CP is responsible for the online publication of APFCB News, with the committee chair serving as the Chief Editor. In 2024, the newsletter was published twice, featuring a wealth of information, including annual reports from member societies, young scientist interviews, expert opinions and special reports.

5. **DOI and ISSN Registration:**

   In the preceding year, the C-CP successfully completed the DOI (Digital Object Identifier) registration for the APFCB e-News. Additionally, the committee has initiated the ISSN (International Standard Serial Number) registration process, and by the end of mid 2025, we expect to receive this number. These steps are crucial in enhancing the credibility and accessibility of the federation's publications.

6. **APFCB Webcast & e-Learning Programme:**

   The committee has launched the "APFCB Webcast & e-Learning Programme" as part of its efforts to promote global learning. This initiative is designed to provide accessible, high-quality educational content to laboratory professionals worldwide, furthering the federation's mission of advancing knowledge and practice in clinical biochemistry and laboratory medicine. In 2024, we successfully hosted two webinars. The first focused on biomarkers in the spectrum of glycemia in metabolic syndrome, while the second addressed lead poisoning, featuring expert speakers from Iran, India, Pakistan, and Nepal. We have made efforts to incorporate speakers from the Asia-Pacific region and will continue to prioritize their inclusion, ensuring topics of regional relevance will be addressed.

Future Recommendations:

- **Stakeholder Engagement:**

  - **Interactive Sessions with Member Associations:** To organize virtual meetings or interactive sessions with member associations to gather their input. This will help tailor content and initiatives to better meet the needs of the broader community.

  - **Survey and Feedback Mechanism:** We conducted an online survey on the use of laboratory techniques for blood lead testing across the Asia-Pacific region, targeting webinar participants to enhance response rates. The findings will be published in the upcoming edition of our APFCB News and will be widely circulated. We plan to conduct and expand the surveys across our region.

Diversification:

- **Special Issues of APFCB News:** For September 2025, we plan to publish a special issue focused on in-house troubleshooting algorithms developed by laboratories across the Asia-Pacific region, including issues related to clinical laboratory mismatches. We will circulate information about this initiative among all member societies and aim to include as many algorithms as possible that will benefit APFCB community worldwide.

- **Podcast:** APFCB-C CP proposes to initiate podcast where APFCB C-CP working member will interview renowned figures in our region on key topics. We will pick the publication and will interview the author/expert. The guidelines for APFCB podcast is under construction.

Technology and Innovation:

- **Adoption of New Tools:** To adopt new digital tools and platforms that can enhance the APFCB's ability to produce and disseminate content, such as advanced analytics for social media, content management systems, or email marketing software, and anti-plagiarism software.
- **Development of a Mobile App:** To develop an APFCB mobile app to provide members with easy access to publications, event information, and educational resources on the go.

- **Featuring Clinical Cases:** The committee plans to feature more clinical cases in the upcoming issues of APFCB News, recognizing their value in medical education and the potential to inspire new ideas and approaches in the field.

As members of the Communication and Publication Committee, we remain committed to advancing the APFCB's mission and look forward to continuing our efforts to enhance communication, education, and collaboration within the global laboratory medicine community.

Report by:
Team APFCB C-CP

Report APFCB Congresses and Conferences Committee (C-CC), 2024

Chair: Dr. Woei-horng Fang (Taiwan)

Members:

Mr. Ronaldo Puno (Philippines)
Dr. Rajiv Ranjan Sinha (India)
Dr. Mehrdad Vanaki (Iran)
Ms. Sasha Duan (Mindray - Corporate Member)
Mr. Fionn Quinlan (Waters - Corporate Member)

Key Activities:

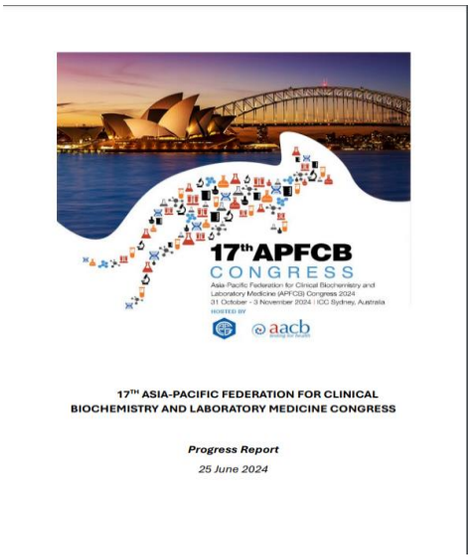
1. Oversee the organization of the APFCB Congresses and report to APFCB EB and Council for 17th APFCB Congress, Sydney, and 31 Oct 3 Nov 2024, the C-CC worked closely with Congress Organizing Committee (COC) of the17th APFCB Congress.

2. APFCB 2024 ICC Site Inspection, 30 Oct 2023, C-CC Chair and APFCB President met with the COC and PCO at Congress venue, report submitted to the APFCB Executive Board.

3. C-CC Chair participated in APFCB Congress 2024 Scientific Committee Meeting (Web meeting) on 24 Mar 2023, 3 May 2023, 31 May 2023, 16 Aug 2023, 24 Oct 2023, 15 Nov 2023, 13 Dec 2023, 10 Jan 2024, 8 Feb 2024, 18 Apr 2024, 6 Jun 2024, 17 Jul 2024, 21 Aug 2024, 25 Oct 2024.

4. C-CC Chair also participated with APFCB Congress Organizing Committee Meeting (Web meeting) on 10 May 2023, 30 Nov 2023, 25 Jan 2024, 11 Mar 2024, 29 Apr 2024, 26 Jun 2024, 31 Jul 2024.

5. APFCB Congress 2024 Progress Report, 25 Jun 2024 is prepared by the COC and PCO and submitted to the C-CC, then circulated among APFCB Executive Board and Council members.



1) APFCB auspices 2024

APFCB C-CC is awarding of auspices of the APFCB for various scientific events like conferences, congresses, events organized by regional society members and corporate members. The C-CC is careful to award auspices only to scientific meetings that are organized by learned bodies and vendors such as APFCB corporate members where the content is of scientific and educational value.

The committee also worked on updating the Congresses and Conferences webpage of APFCB to include the details of the major scientific events, which have been granted APFCB auspices. APFCB EB encourages all the Member associations to apply for APFCB auspices for their annual meeting.

2) Date change of 18th APFCB Congress

To avoid APFCB congress clashing with IFCC WorldLab Congress in the same year, through an extensive discussion in EB, the 18th APFCB Congress was decided to move from original planned year 2026 to 2027.

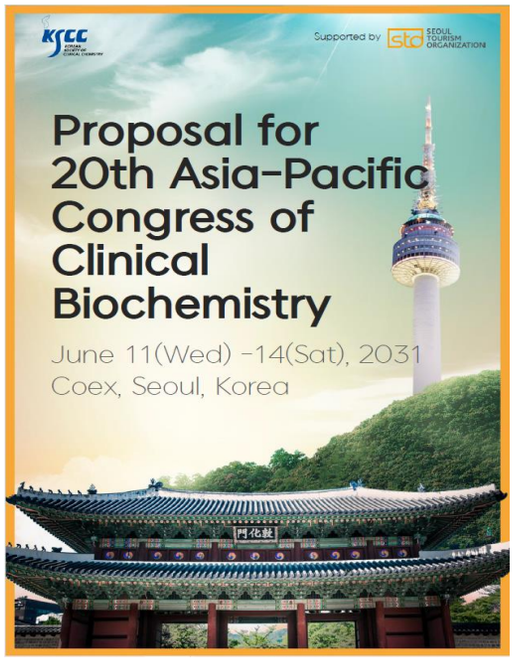
The 18th APFCB Congress 2027, Kuala Lumpur, Malaysia organized by Malaysian Association of Clinical Biochemists (MACB) and lead by Dr. Raja Elina Raja Azidd in the Congress Organizing Committee was established and Chairs of sub-committees were selected. A promotional web site was established (apfcbcongress2027.org).

3) Bidding for 19th APFCB Congress 2029

In late August 2024, APFCB C-CC evaluated materials from IACC and SACB for APFCB Congress 2029 bidding. According to the guideline criteria, no major deficiency was found in both applications, and all APFCB C-CC members granted very high scores to both applications. APFCB C-CC considers both bidders provide high quality venues and good organizers to ensure success of hosting APFCB Congress 2029. The final decision of the venue was sent to APFCB Council Meeting on 31October2024 to vote. Finally, IACC won by one vote and 19th APFCB Congress will be held in Bali, 2029.

4) APFCB Council approval of the 20th APFCB Congress 2031 proposal by KSCC

During difficulty in COVID-19 pandemic period, KSCC provided generous service to APFCB. An assurance of was given to KSCC in 2021 by the then APFCB President to let KSCC to have a noncompetitive bidding right for organizing a future APFCB Congress. In May 2024, KSCC expressed their interest to host 20th APFCB Congress 2031. Then KSCC prepared a complete proposal and presented in APFCB Council Meeting on 31 October. The proposal was approved by the Council and the 20th APFCB Congress 2031 will be held in Seoul, Korea.



APFCB Congress 2024, Sydney- Fabulous Congress in Famous City

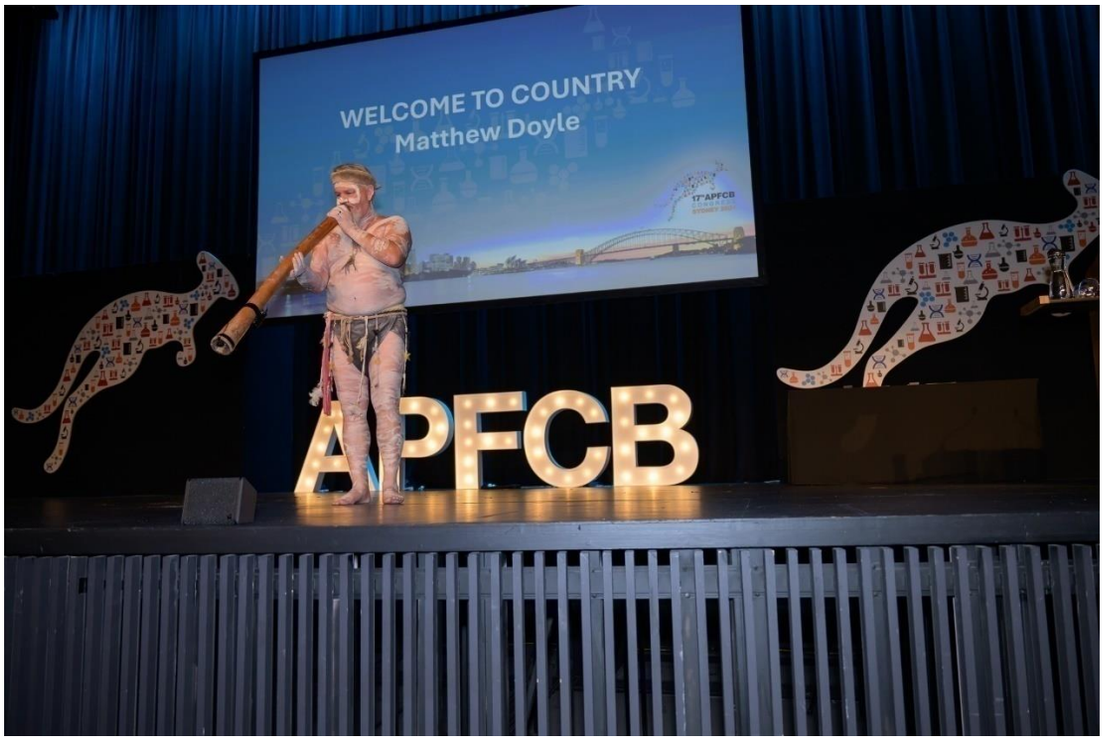
Report by:

Dr. Woei-horng Fang

APFCB Committee of Congresses and Conferences Chair

APFCB Congress Sydney 2024, the 17th Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine Congress, together with the AACB 61st Annual Scientific Conference that was held in Sydney from the 31stOctober to 3rd November 2024, has been a great success!

This is the first in person APFCB Congress after COVID pandemic. Sydney, the famous iconic city for Australia, hosted approximate 1000 people at the Convention Center “the ICC”, the modern and stylish Convention Center. This allowed delegates from across the APAC region to gather in here to further their knowledge in the field and to share their experiences.



(Photo 1) Australian aboriginal artist perform Australian traditional music APFCB Congress 2024 in opening ceremony

Additionally, 39 IVD companies participated and gave life to dynamic exhibition floor showcasing the recent novel technologies and practical solution for Clinical Biochemistry and Laboratory Medicine. Special thanks to Roche and Snibe as Platinum Sponsor, Abbott and Werfen as Silver Sponsor provided great supports.

Thanks to the Scientific Program Committee work, distinguished international speakers and key opinion leaders delivered their presentations about health care, recent advance in diagnostic technologies, novo scientific findings and challenges along with 4 plenary lectures, 22 Symposia, 4 Pre-congress Workshops, 8 Educational Workshops, 5 Industrial Symposia, 10 Meet the Expert Breakfast Sessions, and 6 Concurrent Oral Presentations of 28 selected submitted papers.

A good number of accepted poster (300) were shown in a traditional way throughout the whole conference providing plenty of time for viewing and discussions. A total of 36 Travelling scholarship were granted to encourage young scientists' participation of the Congress.

(Photo 2) Group photo of APFCB Congress 2024 Scholarship recipients

During the Opening Ceremony, Immediate Past President Endang Hoyaranda announced the awardee of APFCP Distinguished Service Award 2024 is Dr. Sunil S. Sethi, thanks to his years' excellent service to APFCB.

(Photo 3) Dr. Endang Hoyaranda APFCB Immediate Past President announced the awardee of APFCP Distinguished Service Award 2024 is Dr. Sunil S. Sethi. The representative from SACB received the award on behalf or Dr. Sethi.

4 Plenary Speakers were invited, who spoke across the four days of the Congress. A/Professor Ken Sikaris was the opening plenary speaker talking on 'Analyzing Clinical Governance'. Dr Carla Cuthbert opened the program on Friday speaking about 'the changing landscape of laboratory testing - Lessons learned from newborn population screening in the US'. Professor Gerald Watts shared his knowledge on 'Between Scylla and Charybdis: Navigating Risk of Inherited Heart Disease due to FH and High Lp (a)' on Saturday. Professor Maxine Whittaker closed the Congress speaking on 'Leaving no-one behind – the critical role of laboratory services to support universal health coverage in Low- and Middle-Income countries'.

(Photo 4) Congress President Helen Martin Chaired A/Professor Ken Sikaris opening plenary lecture

(Photo 5) COC member Dr. Ronda Greaves chaired Dr Carla Cuthbert's plenary lecture

For the Congress dinner, delegates received an exclusive ticket to the highly anticipated Halloween-themed Congress Dinner, held at Dolt one House, Jones Bay Wharf. The event kicked off with a range of cocktails on the venue's balcony, offering guests the perfect opportunity to mingle and take in breathtaking views of the Sydney Harbor Bridge at sunset before settling in for a delicious three-course dinner. The Halloween spirit came to life throughout the evening, with the venue transformed into a Haunted House, complete with eerie decorations that added a thrill to the atmosphere. Attendees fully embraced the Halloween theme, arriving in an impressive array of creative and spooky costumes.

(Photo 6) Congress dinner attendees fully embraced the Halloween theme

(Photo 7) APFCB Congress 2024 Congress dinner

(Photo 8) APFCB President, EB members and COC members were very enjoy the Congress dinner

Such enthusiastic participation at the APFCB Congress in Sydney is a testament to the value and importance of the APFCB Congresses. The significant number of attendees indicates a strong interest in the topics and discussions presented at the Sydney Congress. This success opens the way for future APFCB Congresses to continue growing and achieving even greater success.

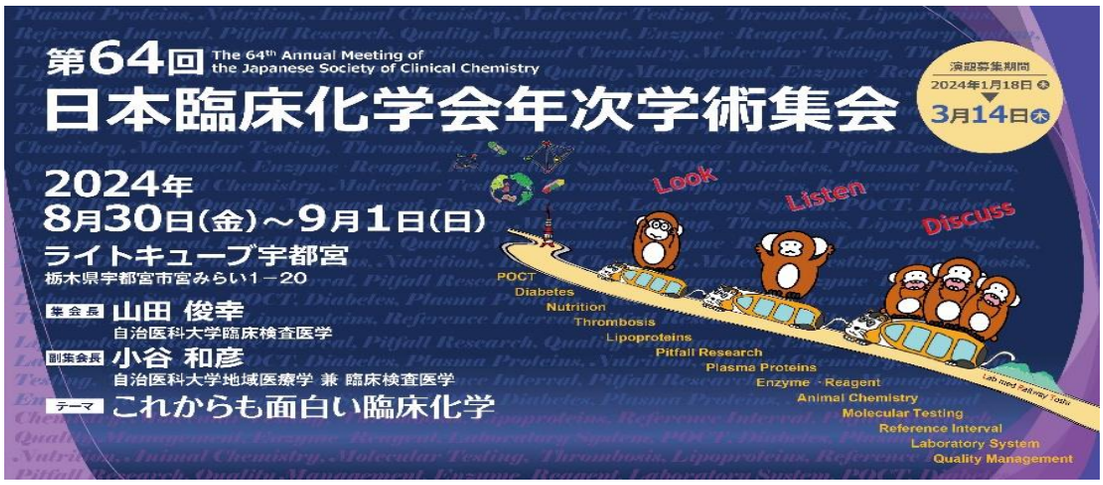
Thanks to the COC (Congress Organizing Committee, chaired by Helen Martin), to the SPC (Scientific Program Committee, chaired by Tony Badrick) and ICMSA Team for their tremendous effort that made possible this successful Congress.

National Society Report- JSCC, Japan

NAME OF SOCIETY	Japan Society of Clinical Chemistry (JSCC)
OFFICIAL SOCIETY EMAIL ADDRESS	**jscc@mc-i.co.jp**
NAME OF NATIONAL REPRESENTATIVE TO APFCB & EMAIL ADDRESS	Takashi Miida, tmiida@juntendo.ac.jp, **jscc@mc-i.co.jp**

The 64th Annual Meeting of the Japan Society of Clinical Chemistry (JSCC), chaired by Professor Toshiyuki Yamada (Department of Clinical Laboratory Medicine, Jichi Medical University), was held at the venue "Light Cube Utsunomiya" in Tochigi from August 30 to September 1, 2024. Unfortunately, a big typhoon emerged, stopped the traffic, and consequently forced some participants to attend online. Also, the records of some sessions were delivered later as on demand viewings. Nevertheless, paid participants reached more than 850, and approximately 700 attended on site. The theme of the meeting was "Clinical Chemistry: getting attractive more and more", desiring that young researchers do not hesitate to start investigations. In fact, a workshop, which prompts them to do research, was successfully held. Special lectures were given by Dr. Kenjiro Ono (Professor of the department of neurology, Kanazawa University School of Medicine) and Dr. Kaori Muto (Professor of the department of Public Policy. Human Genome Center, The Institute of Medical Science, The University of Tokyo). Dr. Ono gave a lecture entitled "Alzheimer disease: An approach by disease modulation", in which he presented new therapeutic approaches using anti-Aβ antibodies for the Alzheimer disease, emphasizing the importance of removal of the protofibrils. Dr. Muto gave a lecture entitled "Sociology for laboratory medicine", in which she emphasized the importance of the sense of ethics and the consideration for patient feelings in any research area. In the JSCC international session, Professor Alan T. Remaly of National Institute of Health gave a presentation entitled "Low -density lipoproteins: Update from basic science to new therapeutics and diagnostics". He was in Japan, but the typhoon problem forced him to present online. He lectured mainly the updated understanding for the pathological aspects of low-density lipoproteins based on his recent investigation for the structural analysis of apolipoprotein B. Dr. Yamada gave a chairperson's lecture entitled "Clinical plasma protein-ology." He presented his experience regarding the physiological and pathological aspects of serum amyloid A protein. He also mentioned the strategies for standardization of plasma protein measurements. In addition, there were 4 educational lectures by experts, 14 symposia, 11 co-sponsored seminars, and 110 general and student presentations. Finally, we would like to express our sincere gratitude to all the participants, to the sponsors, to the secretariat of the Japan Society of Clinical Chemistry, to the staff members of the Department of Clinical Laboratory Medicine, The Jichi Medical University, and to the members of the clinical laboratory departments at Jichi Medical University Hospital. The next 65th meeting will be held by Dr. Kuniaki Saito (Vice president, Fujita Medical University) in Nagoya, from November 7 to 9, 2025.

(Photo 1)



(Photo 2)

(Photo 3)

(Photo 4)

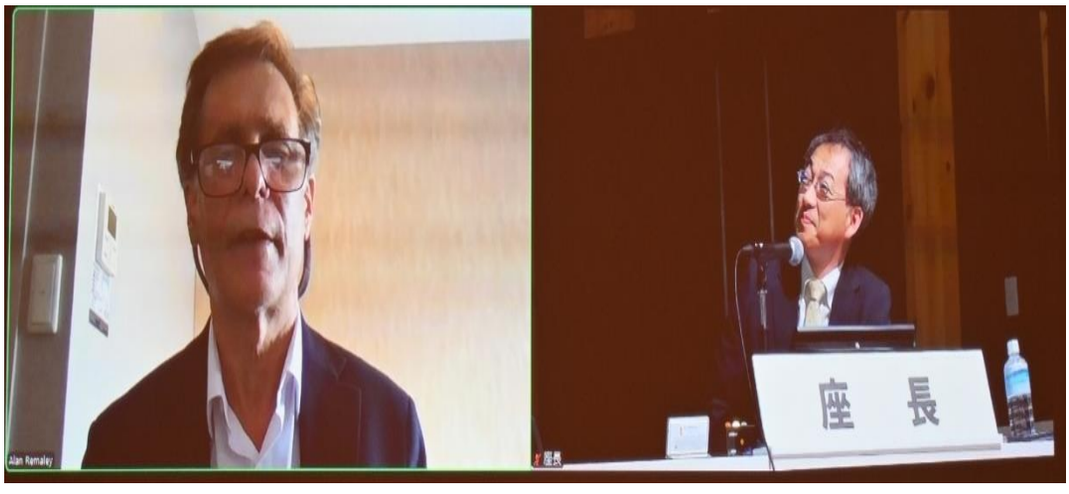


Photo 1: Poster for the 64th annual Meeting of the Japan Society of Clinical Chemistry

Photo 2: Dr. Toshiyuki Yamada (Professor of the Department of Clinical Laboratory Medicine, Jichi Medical University) gave a chairperson's lecture on the last day of the meeting.

Photo 3: Dr. Kenjiro Ono (Professor of the Department of Neurology, Kanazawa University School of Medicine) gave a special lecture on the first day of the meeting.

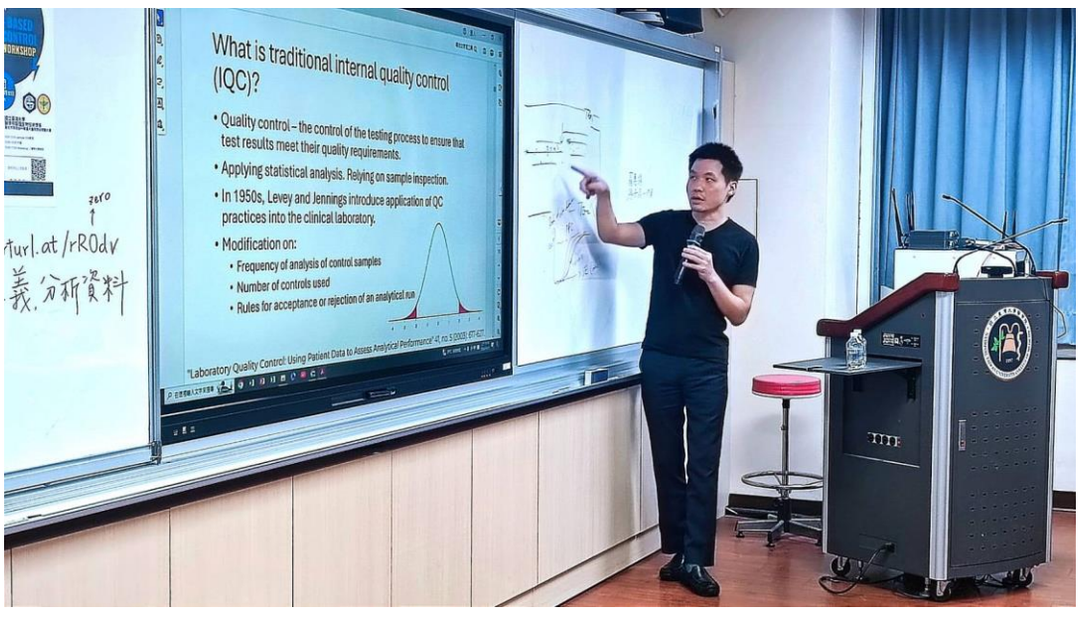
Photo 4: Professor Alan T. Remaly of National Institute of Health gave a lecture online in the JSCC international session on the second day, chaired by Professor Kazuhiko Kotani of Jichi Medical University, the vice president of the meeting.

National Society Report- CACB, Taiwan

NAME OF SOCIETY	Chinese Association for Clinical Biochemistry (CACB-Taiwan)
OFFICIAL SOCIETY EMAIL ADDRESS	**office@cacb.org.tw**
NAME OF PRESIDENT & EMAIL ADDRESS	Sandy Huey-Jen Hsu **sandyhsu@ntu.edu.tw**
NAME OF NATIONAL REPRESENTATIVE TO APFCB & EMAIL ADDRESS	Woei-horng Fang **whfang@ntu.edu.tw**

REPORT ON SOCIETY ACTIVITIES by Dr. Ching-Ying Kuo, CACB Secretory General (2022-2024), CACB Board of Director (2025-2027)

The Chinese Association for Clinical Biochemistry (CACB) successfully hosted the Patient-Based Quality Control Workshop on October 12, 2024, in collaboration with the Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB). The event featured Dr. Tze Ping Loh, a renowned APFCB Traveling Lecturer, who shared his expertise on the critical role of patient-based quality control in clinical laboratories (Photo 1). Ms. Hui Qi Low, Research Engineer at the Singapore Institute of Technology, shared the tool that they have designed for implementing patient-based quality control in everyone's lab (Photo 2). The workshop was attended by 50 participants, including clinical laboratory professionals, students, and educators from across the country (Photo 3). Through Dr. Loh's comprehensive and engaging presentation, attendees gained valuable insights into patient-based quality control methodologies, their practical applications, and the latest advancements in the field. The workshop fostered lively discussions, enabling professionals to share experiences and explore collaborative opportunities.



(Photo 1) Dr. Tze Ping Loh at the Patient-based Quality Control Workshop.

(Photo 2) Ms. Hui Qi Low at the hands-on session of the Patient-based Quality Control Workshop.

(Photo 3) Dr. Tze Ping Loh, Ms Hui Qi Low and all the participants at Patient-based Quality Control Workshop.

October 12, 2024, CACB ran the election for CACB Executive Board 2024-2027. On October 15, 2024, Dr. Huey-Jen Hsu, Chief Technologist and Leader of the Sample Collection Center, Department of Laboratory Medicine, National Taiwan University Hospital, was re-elected as the CACB President. Dr. Woei-horng Fang continues to serve as Executive Director and National Representative for the same period. Dr. Tzu-Ming Jao is appointed as The Secretary General (Photo 4).

(Photo 4) CACB Executive Board 2024-2027.

Upcoming events for 2025:

CACB annual conference and scientific symposium will be held in conjunction with the 39th Joint Annual Conference of Biomedical Science (JACBS). The main theme for JACBS 2025 is “Advancing Therapies in Cancer and Diseases”. CACB has proposed a scientific symposium on “Exosomes: Emerging role in diagnostics and therapeutics”. Dr. Tang-Long Shen, Professor of Department of Plant Pathology and Microbiology, will deliver a keynote speech. Three speakers, Professor Chih-Yuan Wang, Professor Howard Doong and Professor Kuender Yang are invited to share their expertise of exosomes in biology and clinical applications.

National Society Report- HKSCC, Hong Kong

National Society Report for APFCB News NAME OF SOCIETY	Hong Kong Society of Clinical Chemistry
OFFICIAL EMAIL	**hkscc@hos.com.hk**
PRESIDENT	**Name:** Dr. Sammy PL Chen
APFCB NATIONAL REPRESENTATIVE	**Name:** Dr. Sammy PL Chen

Report on Society Activities

The Hong Kong Society of Clinical Chemistry (HKSCC) actively organized a number of educational activities for our members for the past year. Just with the beginning of 2024, we arranged our the Annual Scientific Meeting (ASM) on 20 January 2024. The theme of the ASM was "Current Advances in Artificial Intelligence". There were two presentations by invited speakers: (1) " Advancements in Generative AI and Implications for the Future of Work and Talent Cultivation" by Prof Helen ML MENG, Patrick Huen Wing Ming Chair Professor, Systems Engineering and Engineering Management; Director, Stanley Ho Big Data Decision Analytics Research Centre, the Chinese University of Hong Kong (CUHK), and (2) "Artificial intelligence in Chemical Pathology: sines of life, and cosines of diseases" by Dr Calvin YK CHONG, Consultant (Pathology), Toxicology Reference Laboratory, Department of Pathology, Princess Margaret Hospital, Hospital Authority. These were followed by six industrial presentations and fifteen industrial partners participating in the industrial exhibition. The ASM was well attended by 250 HKSCC members and guests. Hold 2 online scientific webinars via Zoom platform in 2022.

We hold three lectures by invited overseas speakers this year, with the first one on 4 May 2024 titled "Overview of Biomarkers for the Diagnosis of Alzheimer's Disease", by Dr Sebastian PALMQVIST, Senior Consultant Neurologist, Associate Professor & Senior Lecturer, Lund University and Skåne University Hospital, Sweden (co-hosted with Roche Diagnostics HK), and the next one "The Benefits of Traceable Results: Your Lab, Your Country, the World" by Prof. Graham JONES. Department of Pathology (SynPath), St. Vincent's Hospital, Sydney, Australia (co-hosted with CUHK). The latest one was "Liver Pathology & Interpretation of Liver Function Tests Made Easy" by A/Prof Zhong X LU, Director of Chemical Pathology, Monash Health Pathology, Monash Health & A/Prof, Department of Medicine, Monash University, Vic, Australia (external examiner of Hong Kong College of Pathologists, co-hosted with Queen Elizabeth Hospital).

On top of these, we also arranged a visit to our world class Hong Kong Jockey Club Racing Laboratory on 16 Aug 2024. The events did draw significant interests from our members. We promoted and supported our 17th Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine Congress 2024 held in ICC Sydney, Australia, including contributing to one full scientific session on Therapeutic Drug Monitoring and Pharmacogenetics. We are also committed to encourage our local next generation of our field by offering awards and book prizes.

(Group photo 1) HKSCC Council Members

(Group photo 2) taken at Hong Kong Jockey Club Racing Laboratory

National Society Report- AACB, Australia

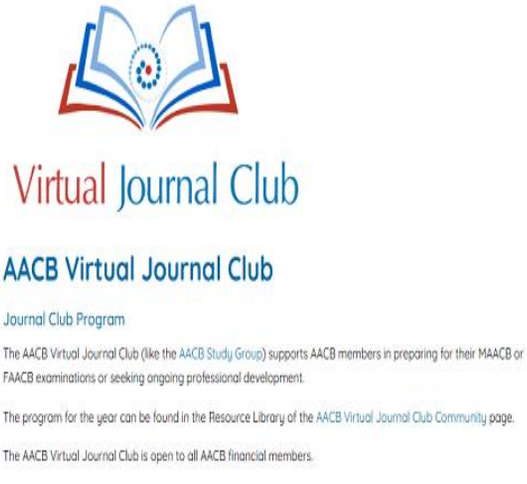
NAME OF SOCIETY	Australasian Association for Clinical Biochemistry and Laboratory Medicine (AACB)
OFFICIAL SOCIETY EMAIL ADDRESS	**office@aacb.asn.au**
NAME OF PRESIDENT & EMAIL ADDRESS	Mr Greg Ward **president@aacb.asn.au**
NAME OF NATIONAL REPRESENTATIVE TO APFCB & EMAIL ADDRESS	Mr Greg Ward **president@aacb.asn.au**

Report by:

Dr Fernando San Gil MSc PhD MAACB ARCPA
Chief Executive Officer, Australasian Association for clinical biochemistry and laboratory medicine

Throughout 2024, AACB activities have met the challenges presented by tightening financial constraints across all areas of the economy. At the core of the AACB's vision is ongoing professional development for its members and the wider pathology community. To this end, the AACB events calendar offered a large range of local, national and international events to attract and engage laboratory professionals and other interest parties from around the region.

Branch events were held almost on a monthly basis at each of the seven AACB Branches distributed across Australia and New Zealand. Events included in-person, virtual and hybrid formats. While virtual events should never replace in-person interaction, they are a great way of attracting participation when time and distance is an issue. Over the last two years, the AACB has also embarked on initiatives to promote engagement with a wider and often geographically-dispersed audience. These initiatives are the Virtual Study Group and the Virtual Journal Club. In 2024, the Virtual Study Group offered registrants 17 interactive tutorial sessions on different topics taken from the AACB Curriculum. Each session was led by an expert on the topic. In 2024, the Virtual Journal Club offered 10 interactive online sessions looking at current journal publications in laboratory medicine.



(Photo 1)

The first of two premier National activities, namely, the annual RCPAAACB Chemical Pathology Course was held in February 2024, in Melbourne Victoria. This was (and always is) a highly successful event.

This is an intense learning experience lasting almost a week, and a significant learning opportunity for both experienced medical and non-medical professionals and trainees. Over the years, the course has attracted a wide range of participants, from early career scientists to those wishing to continue their professional development, and others sitting for examinations offered by the AACB and RCPA. In 2025, the RCPA-AACB Chemical Pathology Course will be held in February, in Adelaide South Australia. The year 2024 began with a great deal of activity on the part of the Conference Organising Committee and the Scientific Program Committee preparing for themuch-anticipated17thAPFCB Congress held later in the year. The APFCB Congress normally takes place every three years.

The 17th APFCB Congress was meant to take place in 2022; however, due to Covid-19 the committee made the decision to postpone until the Congress could take place in person. The 17th APFCB Congress was held in conjunction with the 61st AACB Annual Scientific Conference at the Sydney International Conference and Convention Centre from 31st October to 3rd November 2024. As the host for this prestigious event, the AACB welcomed friends and colleagues from around the region, and beyond, for a few very exciting days. The face-to-face meeting attracted over 900 delegates from around the world and included 4 Plenary Speakers, 75 Invited Speakers, 4 Pre-Congress Workshops, 10 “Meet the Expert” Breakfast Sessions and 300 accepted posters. It was a highly anticipated and highly successful event for both organisers and delegates. In 2025, the 62nd AACB Annual Scientific Conference is scheduled for 13-16 October 2025 in Auckland, New Zealand. Once again, the AACB looks forward to welcoming delegates from around the world for this event.

(**Photo 2)** Welcome to Country


(Photo 3) Opening Welcome by Congress Opening Plenary Speaker – A/Prof Ken Sikaris Chair, Helen Martin

(Photo 4) Exhibition


(Photo 5) Sessions

(Photo 6) Congress Scholarship Recipients

One of the great challenges for the AACB has been to encourage engagement from its members and the wider pathology community. The initiatives and the events of the AACB have been planned so that many (if not most) are recorded for later viewing via the AACB website. This benefits everyone, especially when time zones, work commitments and other factors prevent attendance at the time of the event. The AACB hopes to continue and expand this facility as part of its vision for laboratory medicine, especially in the Asia Pacific region.

This year was also a time for significant change for the AACB. In January, the AACB transitioned from being an Incorporated Association to a Company limited by Guarantee. This significant step was the first step in the application for charitable status within Australia. The transition meant significant change to the governance of the AACB, with a Board of Directors being appointed. The current AACB President is Mr Greg Ward. After having served many years at an executive level Dr Tina Yen stepped down from the role of Past President. The election in 2024 saw the appointment of Assoc Prof Ronda Greaves as the AACB President-Elect, commencing a 4-year presidential term that incorporates 1-year as President-Elect, 2-years as President, and 1-year as Past President. Prior to being elected as President-Elect, Ronda was the Director – Education and Training and Chair of the AACB Education Committee.

(Photo 7)

AACB Board, from left, Kate Driver (Director), Dr Tina Yen (outgoing past president), Robert Flatman (Director), Fernando San Gil (CEO), Greg Ward (President), Ronda Greaves (President-Elect) & Chanika Ariyawansa (Director).

This year has also seen the appointment of the next AACB CEO. Dr Fernando San Gil steps down from this role at the end of the year. Ms Lisa King commences as the AACB CEO on Monday, 6th January 2025. Lisa brings over 25 years of expertise in project management, with 17 years dedicated to the AACB as Events Manager. In this role, she has cultivated an in-depth understanding of the AACB, excelling in corporate and member engagement, and earning the confidence of its Officers and Members. Lisa has successfully planned and delivered numerous local, state, and national events for the AACB, including being integral to the success of the

Lisa King

17th APFCB Congress, solidifying her reputation as a highly effective and reliable leader. Beyond her work with the AACB, Lisa has managed events for other important organisations, including the Human Genetics Society of Australasia's Annual Scientific Conference for the past seven years. Lisa's extensive skill set spans project management, marketing, sponsorship, logistics, stakeholder engagement, and customer service –tools that will be used to drive the continued success, growth and evolution of the AACB.A trusted and familiar figure within the AACB, Lisa is well known to many AACB Members and enjoys excellent professional relationships with the AACB Office team, the Executive Board, the Advisory Council, and standing committees. Lisa's strong network and proven track record make her an invaluable asset to the AACB.

National Society Report- KSCC, Korea

NAME OF SOCIETY	Korean Society of Clinical Chemistry (KSCC)
OFFICIAL SOCIETY EMAIL ADDRESS	**kscc1111@gmail.com**
NAME OF NATIONAL REPRESENTATIVE TO APFCB & EMAIL ADDRESS	Yong-WhaLee, **kscc1111@gmail.com**

The Korean Society of Clinical Chemistry (KSCC) has consistently played a pivotal role in advancing clinical chemistry and laboratory medicine through its comprehensive educational programs and collaborative initiatives. Below is an overview of its recent and upcoming events.

KSCC Fall Meeting, October 16-17, 2024

The KSCC Fall Meeting, held on October 16-17 at the Seoul Science and Technology Convention Center, attracted 355 participants, including clinical pathologists, residents, and certified laboratory technologists. The program included four symposium sessions, four workshops, and a post-meeting online review course offered via a video-on-demand (VOD) format. Highlights of the meeting included:

- Symposia: Sessions addressed topics such as advancements in internal quality control, new developments in tumor markers for prostate cancer, standardization efforts in hormone testing, and the role of laboratory medicine in geriatric care. The inclusion of geriatric diagnostics provided a fresh perspective for attendees.

- Workshops with hands-on sessions: The third installment of the assay performance evaluation workshop focused on analytical performance specifications, comparability evaluations, and analytical specificity. Concurrently, a workshop on diagnostic testing-related guidelines and evidence addressing recent standards for testing of vitamin D and bone metabolic markers, diabetes, thyroid function, and sepsis biomarkers was also made. A data analysis competition highlighted innovative approaches to mismatched sample analysis, while a session on therapeutic drug monitoring blended theoretical concepts with real-world applications, equipping participants with skills for immediate implementation.

- Post-Meeting Online Review Course: A Video-on-Demand (VOD) platform offering seven curated lectures, spanning clinical chemistry subspecialties and laboratory management practices.

The KSCC continues to prioritize education by effectively combining in-person and digital platforms. The workshops and VOD programs during the fall meeting equipped participants with both hands-on skills and theoretical knowledge, ensuring a well-rounded learning experience.

Here are the event photos:

(Photo 1)- Professor Yong Wha Lee (President of KSCC) delivering the opening address

(Photo 2)- Executive board members and advisors of KSCC

(Photo 3)- The organizing committee of the 2024 KSCC fall meeting

(Photo 4)- A symposium session in progress

(Photo 5)- Exhibition booths and networking among attendees

KSCC 2025 Spring Meeting Plan

KSCC is planning to host its spring meeting in Seoul on April 16-17, 2025.

National Society Report- ACBI 2024, India

50th Annual Conference, ACBICON 2024, December 4-7, Hotel Mount View, Chandigarh, India

"From Laboratory to Life: Recent Advances in Basic and Medical Research for Global Healthcare"

NAME OF SOCIETY	Association of Clinical Biochemists of India (ACBI)
OFFICIAL SOCIETY EMAIL ADDRESS	**kpsacbi@yahoo.co.in**
NAME OF NATIONAL REPRESENTATIVE TO APFCB & EMAIL ADDRESS	Rajiv Ranjan Sinha, **kpsacbi@yahoo.co.in**

CONFERENCE REPORT

The 50th Golden Jubilee Annual Conference of the Association of Clinical Biochemists of India (ACBICON 2024) was organized by the Department of Biochemistry, Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh at Hotel Mount View, which is situated in the heart of the city surrounded by lush greenery. The conference entitled "From Laboratory to Life: Recent Advances in Basic and Medical Research for Global Healthcare" was held under the auspices of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and Asia Pacific Federation for Clinical Biochemistry (APFCB). It witnessed more than 700 biochemists and medical laboratory professionals from across the country and globe, marking half a century of ACBI's contribution to the field of clinical biochemistry. The extensive scientific program of the conference was graced by the presence of esteemed national and international dignitaries from 16 different countries: the USA, Canada, Netherlands, Germany, Hungary, Turkey, Italy, France, Belgium, Australia, Malaysia, South Africa, the United Kingdom, Japan, and Indonesia. The program included orations, symposia, panel discussions, and pre-conference workshops that provided an enriching platform for experts to exchange knowledge and discuss the latest advancements in the field. The main conference had three parallel sessions, each of which witnessed good attendance and active participation from delegates. Prof Sedef Yenice (Turkey) and Prof Bernard Gouget (France) participated as Visiting Lecturers under the IFCC-Abbott Visiting Lecturer Program (IFCC-VLP). Prof. Yenice's lecture focused on Clinical Laboratory Management, while Prof. Gouget addressed the identification, assessment, and translation of emerging diagnostic technologies and data analysis procedures from academic laboratories to clinical settings. Their contributions provided valuable insights, emphasizing the importance of bridging the gap between research and its successful implementation in healthcare.

Prelude to the 50th ACBICON 2024 Chandigarh: Insightful Pre-Conference Workshops:

Before diving into the scientific content of the conference, seven pre-conference workshops were organized on December 4, 2024, all of which were at full capacity. All workshops were conducted simultaneously in different departments of PGIMER and Panjab University in Chandigarh. The first workshop, entitled Bioinformatics approaches for Transcriptome Data Analysis, was designed to unravel molecular mechanisms by utilizing the power of bioinformatics. The workshop was conducted by Dr Veena Puri, Professor in the Department of Bioinformatics at Panjab University, Chandigarh. A workshop on digital PCR was organized to gain a deeper understanding of molecular techniques. This workshop was conducted by Dr. Naresh Sachdeva of the Department of Endocrinology. The overview and demonstration of another sophisticated molecular technique, mass spectrometry (LC-MS and GC-MS) was conducted in the workshop entitled Biochemical diagnosis of inborn errors of metabolism, which was organised by Dr Savita Verma Attri and Dr Jayakanthan K, from the Department of Paediatrics, PGIMER, Chandigarh and their team.

The workshop also highlighted the genetic screening of newborns for inborn errors of metabolism, the utility of LC-MS for quantification of amino acids and acyl carnitines, profiling of urine organic acids using GC-MS, their clinical implications, and case discussions. The fourth workshop was conducted on the Basics of Next Generation Sequencing (NGS), followed by a demonstration of the NGS Ion Torrent platform for budding researchers by Dr. Prateek Bhatia and his team. The fifth workshop focused on the Fundamentals of High-Performance Liquid Chromatography (HPLC), from introducing the technique and its application in detail to a practical demonstration. The workshop was conducted in the Department of Biochemistry by Dr. Justin Peter from Thermo Fisher Scientific. The sixth workshop was on Effective implementation of Self-Directed Learning (SDL) in biochemistry conducted by Dr Sucheta Dandekar, Dr Rohini Bhadre and Dr Farzana Mahdi. Through a deep dive into the importance of SDL in fostering critical thinking, knowledge retention, and lifelong learning, the workshop offered participants an opportunity to explore the factors that influence motivation and engagement in SDL. The workshop on Proficiency testing was conducted by Dr Pradeep Dabla, Dr Tony Badrick, Dr Pankaj Johri and Dr Pamela Christudoss. It aimed to build the capacity training of laboratory personnel and medical laboratories to meet the quality and accreditation requirements and to reflect current scientific or medical issues that are important to healthcare with a framework for the interchange of knowledge and expertise. scientific or medical issues that are important to healthcare with a framework for the interchange of knowledge and expertise.

(Photo 1)

(Photo 2)

(Photo 3)

Conference: Inauguration and Scientific program

The inaugural ceremony of the conference, held on December 05, 2024, began with the warm welcome address by Dr. Indu Verma, the Organizing Secretary of ACBICON 2024. Her address underscores the role of clinical biochemists in healthcare and the continuing need for research and innovation to improve diagnostic practices. She also extended gratitude to all the attendees and emphasized the role of ACBICON 2024 in fostering international collaboration, bringing together experts from around the world to exchange knowledge, research, and best practices, ensuring that the conference not only showcased the latest developments, but also aligned with the highest scientific and professional benchmarks. The monumental importance of the event

was further addressed by Dr. Kannan Vaidyanathan, President of the Association of Clinical Biochemists of India (ACBI).

The detailed accomplishment of the association, along with the annual report of the previous year, was provided by the General Secretary, ACBI, Dr. Rajiv Ranjan Sinha. The ceremony was graced by the presence of Honorable Chief Guest, Prof. Digambar Behera, a Padma Shree Awardee, NAMS President, and the Guest of Honor, Prof. R.K. Ratho, Dean (Academics), PGIMER, Chandigarh. Prof. Behera delivered an inspiring address to healthcare advancements and commended the efforts of the organizers. The inauguration ceremony was followed by a cultural program commemorating a rich heritage from the states of Punjab and Haryana. The programme came to a remarkable end with an elaborate dinner at the PGI club, Sector 24, Chandigarh.

(Photo 4)

(Photo 5)

(Photo 6)

(Photo 7)

(Photo 8)

The conference embraced the presence of seven distinguished orations spread over three days, which focused on advancements in basic and medical research in India: K.L. Gupta Memorial Oration delivered by Dr Sanjay Gupta, Professor, ACTREC-Tata Memorial Centre, Navi Mumbai, who described the emerging epigenomic landscape of Gastrointestinal Cancer, with a particular emphasis on its biology and clinical implication in precision medicine. In K.E.M. Hospital & Seth GS Medical College Oration, Dr Sadhna Sharma, ex-HOD, Department of Biochemistry, PGIMER, Chandigarh, highlighted the importance of understanding the molecular dynamics of diabetes and tuberculosis co-pathogenesis. Dr. Tapas K. Kundu, Professor, JNCASR, Bangalore, who delivered the prestigious Dr. Awadesh Saran Memorial Oration, shed light on the epigenetic

regulation of neurological disorders. Dr T.N. Patabhiraman Oration was delivered by Dr Jawahar Kalra, Professor, University of Saskatchewan, Canada, who discussed the intersection of innovation and patient-centric care that can provide the best practice model for medical error disclosures, thereby helping in the advancement of clinical biochemistry. Dr. Taranath Shetty Memorial Oration by Dr. Vivek Lal, Director, PGIMER, and Chandigarh, illuminated the complex interplay of many biochemical changes in migraine, followed by a crucial understanding of the biochemical signalling pathways that could identify novel therapeutic targets for managing patients unresponsive to conventional anti-migraine therapies. Dr. Praveen Sharma Oration, presented by Dr. Subir Kumar Das, Professor, College of Medicine & JNM Hospital, Kalyani, highlighted the influence of soluble factors and total cell-free DNA in the development of preeclampsia. Dr. Amitava Das Gupta, Professor, University of Kansas Medical College, Kansas, USA, was awarded to Mrs. and Dr. G.P. The Talwar Oration addressed the clinical utility of biomarkers in Alzheimer's disease and discussed the implementation of these tests in clinical laboratories.

(Photo 9)

(Photo 10)

(Photo 11)

The 50th ACBICON 2024 was meticulously organized, featuring twenty-six symposia and three panel discussions spread over three days, divided into four parallel segments across distinct halls, each dedicated to specific themes. The first day of the conference featured nine symposia, four oral presentation sessions by young faculty, three oral presentation sessions by researchers, and one panel discussion, followed by a grand inauguration of the conference. Day two comprised ten symposia with three oral presentation sessions by faculty, two oral presentation sessions by students, one panel discussion, and five industrial lectures that ended with a banquet dinner. The final day showed seven symposia with one panel discussion and two industrial lectures that concluded with a valedictory function. Renowned personalities from the fields of clinical biochemistry and laboratory medicine chaired the sessions, enriching the discussions with their expertise. Similar topics were clubbed into symposia, and expert speakers in the respective fields presented their talks and ensured comprehensive learning for the delegates regardless of their prior knowledge of the subject. Each presentation was followed by a Q&A segment, fostering active engagement and facilitating deeper understanding of the topics discussed.

The first session commenced with a discussion on global issues in laboratory medicine, led by esteemed international dignitaries such as Dr Qing Meng (USA), Dr Khosrow Adeli (Canada), Dr Tony Badrick (Australia), and Dr Endang Hoyaranda (Indonesia). Dr. Meng presented the performance of external quality assessments in ten countries in an IFCC global laboratory quality project. The IFCC's leadership in clinical laboratory standardization and harmonization was discussed by Dr. Khosrow Adeli, following which Dr. Tony Badrick addressed how external quality assessments (EQA) can reduce patient risk by comparing results across methods. Finally, Dr. Endang Hoyaranda highlighted the sustainability concerns of the medical laboratories. Parallel sessions focused on topics related to Diabetes & Metabolic syndrome, and gastrointestinal disorders. The highlight was the symposium by the IFCC Committee on Clinical Laboratory Management (IFCC-CCLM) that covered topics such as managing patient and physician expectations to improve satisfaction with clinical laboratory services, presented by Dr Merve Sibel Gungoren from Turkey, the role of leadership in value-based laboratory utilization discussed by Dr Praveen Sharma, and the challenges and strategies for continuous quality improvement in medical laboratories addressed by Dr Sedef Yenice from Turkey. One of the sessions also focused on bone disorders led by Dr. Harjit Pal Bhattoa from Hungary, speaking about the clinical utility of bone turnover markers. The next group of sessions began with discussions on cardiovascular diseases and their risk management and therapeutics, which were explored by Dr. Tahir Pillay (South Africa), Dr. Suresh Kumar Verma (USA), and Dr. Shantanu Sengupta (India). It also included a virtual talk from Dr. Christa Cobbaert (Netherlands) on the clinical evaluation of a multiplex apolipoprotein panel in the Odyssey Outcomes Randomized Control Trial, addressing residual cardiovascular risk with precision diagnostics. The role of nutrients in health outcomes was covered by Dr. Sadanand Naik, who discussed vitamin B12 deficiency and perinatal health, followed by talks related to the topic by Dr. Ashwin Laxmikant Kotnis and Dr. Namita Mahalle. The areas of kidney disorders and prostate cancer were simultaneously explored by prominent international speakers Dr. Joris Delanghe from Belgium and Dr. Pavai Sthaneswar from Malaysia.

The next day, the sessions commenced with a discussion on exposomes by the members of the IFCC Emerging Technologies division (IFCC-ETD): Dr. Bernard Gouget from France, Dr. Damien Gruson from Belgium, and Dr. Swarup Shah from India. parallel, the eleventh session focused on artificial intelligence in lab medicine, chaired by Dr. Jawahar Kalra and Dr. Deepak Parchwani. Dr. Sergio Bernardini (Italy) opened the session with a talk on how machine learning is transforming lab and clinical decision-support tools. The session also covered topics such as building data-driven, AI-augmented AMR stewardship, and surveillance, and exploring clinico-demographic, radiological, biochemical, and proteomic parameter-based predictive algorithms as diagnostic tools for detecting the risk of ovarian cancer by Dr. Tavpritesh Sethi and Dr. Suchitra Kumari, respectively. Recent advances in inborn errors of metabolism have been intricately discussed by Dr. Kannan Vaidyanathan and Dr. Sohini Sengupta on the molecular diagnosis of metabolic disorders and maternal screening for fetal anomalies, respectively. Dr. Anibhh Martin Das from Germany joined the session virtually and discussed the pathophysiology, clinical symptoms, and treatment options for type I glycogen storage disease. A deep dive into the immune mechanisms of various diseases was provided in two parallel sessions. Elaborate discussions on haematological malignancies and other cancers (from diagnosis to therapeutics) have garnered a huge audience. Dr. Debabrata Dash discussed how platelets support cancer growth and spread by interacting with tumor cells. Dr. Hari K. Koul from the USA delivered an online talk, highlighting the role of the prostate-derived ETS transcription factor as a novel biomarker for early detection of lethal prostate cancer. Toxicology became the mainstay discussion in session

exposure during gestation and lactation on memory and learning in F1 generation mice by Dr. Rajarshi Kar, the impact, risks, and remediation of lead toxicity in health issues by Dr. Shailja Sharma, and environmental fusariotoxins in food and their impacts on the epigenome and cancer risk by Dr. Anil Chuturgoon (South Africa). The session on recent developments in Point-of-Care Testing (POCT) included virtual discussions on the use of artificial intelligence in POCT by Dr. Adil Khan (USA), and the current performance and future goals of POCT for HbA1c testing by Dr. Emma English (UK). The importance of connectivity and data management in POCT by Dr. Tjan Sian Hwa (Indonesia) and advancements in the development of POCT devices for non-infectious diseases by Dr. Sudha Srivastava (India) were discussed in person during the session. The concluding session included discussions on recent issues in laboratory medicine. It had a meticulous talk on the use of data-driven decision-making in clinical laboratories for precision practice by Dr. Sedef Yenice (Turkey); risk management strategies in clinical laboratories by Dr. Neeraj Jain; and the importance of properly implementing DQ, IQ, OQ, and PQ to drive sustainability initiatives in smart laboratory environments. This was followed by an invigorating experience of the grand finale round of the AFMC quiz, with five teams on the stage and tension among the audience. The day ended with general body meetings discussing various agendas of the association.

(Photo 12)

(Photo 13)

(Photo 14)

(Photo 15)

(Photo 16)

(Photo 17)

(Photo 18)

(Photo 19)

The banquet dinner of the 50th ACBICON 2024 was organized at the Chandigarh Golf Club on the evening of December 6, 2024. The evening was an exquisite celebration that delivered a truly unforgettable experience, highlighting the diverse culinary spread, ranging from traditional Punjabi dishes to international cuisines. The banquet was a perfect fusion of music and ambience, making attendees of all ages dance and enjoy it. It epitomized the balance of intellectual engagement and social enjoyment that defined the Golden Jubilee celebration of ACBICON and provided an impressive and dynamic conclusion regarding a remarkable event.

The last day of the conference began with a conversation on Proficiency testing, focusing on improving global lab quality, validating pre-analytical scoring, selecting PT materials, and evaluating tumour marker proficiency by Dr Qing Meng, Dr Shyamali Pal and Dr T Venkatesh. The topic of longitudinal evaluation of tumor marker proficiency testing was discussed by Dr. Stefan Holdenreider, from Germany.

Parallel sessions on biomarkers were summarized in detail by Prof. Maurizio Ferrari (Italy), Dr. Ravinder Singh (USA), Dr. Navneet Dhillon (USA), and Dr. Bidhan Chandra Koner. In the next set of parallel sessions, area of precision medicine led by Dr Neeraj Sharma (USA), Dr Binu Kumar, Dr Sudip Kumar Datta and Dr Jatinder Lamba (USA) focused on innovative approaches in personalized healthcare. A series of standout talks on Drug delivery and therapeutics, chaired by Dr Vishwajeet Rohil and Dr Sadhna Sharma, explored treatment strategies for cognitive deficits in temporal lobe epilepsy by Dr B S S Rao followed by detailed discussions by Dr Indu Pal Kaur and Dr. Kalyan Goswami.

The emerging era of OMICS in health and diseases, discussed by Dr Sandeep Kumar Saxena, Dr Medha Rajappa, and Dr Rajvir Dahiya (virtually), focused on the significant role of RNAs in human cells, the integration of genomic, epigenomic, and proteomic approaches in assessing cardiovascular risk in chronic kidney disease, and the application of novel mRNA genomics technology for precision medicine in prostate cancer respectively. The final session of the conference on Neurodegenerative and Mental health disorders covered topics such as metabolism in multiple sclerosis by Dr Shailendra Giri (USA), the neuroprotective potential of *Bacopa monnieri* in Parkinson's disease by Dr Shivani Pandey and the protective role of reduced DRP1 in Alzheimer's disease by Dr Ramesh Kandimalla. The day concluded with a lecture by Dr. Bernard Gouget and valedictory function where multiple ACBI and organizing committee awards were handed out to delegates presenting oral and poster presentations.

(Photo 20)

(Photo 21)

(Photo 22)

(Photo 23)

Panel Discussion

The major highlights of the scientific program were the elaborated three different panel discussions conducted on the three days of the conference, which attracted a huge audience. The first panel discussion on molecular diagnostics was of its kind at the ACBI conference, and it received an overwhelming response from the delegates.

The panel was convened by Dr Kannan Vaidyanathan, chaired by Dr Tahir Pillay and included experts such as Dr Mithu Banerjee, Dr Neeraj Sharma, Dr Prateek Bhatia, Dr Amanjit Bal, Dr Mini P. Singh and Dr. Swarup Shah. They discussed multiple facets of molecular diagnostics, including real-time and digital droplet-based PCR diagnostics, NGS for cancer diagnosis, functional evaluation of variants, and personalized treatments through the lens of pharmacogenetics.

The second day of the conference witnessed another panel discussion on “Laboratory accreditation in government setups: challenges and solutions”, convened by Dr. Sudip Kumar Dutta with a panel of clinical biochemist experts from across the country. A third panel discussion of the conference on biological reference intervals was held which was convened by Dr Seema Bhargava with a panel of seven members - Dr Sudip Kumar Dutta, Dr Barnali Das, Dr Swarup Shah, Dr Nilesh Chandra, Dr Mamta Kankra and Dr Kiyoshi Ichihara.

(Photo 24)

(Photo 25)

(Photo 26)

Poster and Oral Presentations

The 50th ACBICON witnessed more than 200 poster presentations and around 80 oral presentations encouraging residents, research scholars, and young faculties to present their research. Poster presentations increase the visibility of their research work and attract the attention of fellow researchers and delegates, thereby providing excellent networking opportunities. Oral presentations, on the other hand, allowed for an in-depth exploration of topics, followed by healthy discussions. A panel of judges critically evaluated the oral and poster presentations and the winners were awarded cash prizes and certificates for their exceptional contributions during the valedictory. The essence of the event was further enriched by the AFMC Quiz competition organized by the AFMC team, Pune. The quiz ignited a student’s quest, encouraging them to explore the subject matter in greater depth beyond traditional textbooks, and actively engaged the participants and the audience in a fun and competitive environment.

(Photo 27)

(Photo 28)

(Photo 29)

Corporate Innovation & R&D Highlights

The 50th ACBICON, Chandigarh, provided a valuable opportunity for the corporate sector to interact directly with academic researchers, fostering collaboration and knowledge exchange. The insights into the new technologies have captivated the attention of medical professionals and researchers, highlighting the recent advancements in the field that can be integrated to enhance diagnostics and patient care.

(Photo 30)

(Photo 31)

As the Organizing Secretary of ACBICON 2024, it is both my honor and privilege to extend my heartfelt gratitude to the leadership of ACBI for giving us the opportunity and for their continued guidance. I appreciate the unwavering dedication of my colleagues and team members in making this event a reality. The invaluable contributions of our delegates, faculty, ACBI executive committee members, and sponsors to the success of ACBICON 2024 are acknowledged. Together, we celebrated this milestone and continued to strive for excellence in the fields of basic and translational medical research, with a focus on clinical biochemistry. The meticulously curated program provided valuable scientific content that undoubtedly laid the foundation for pioneering progress for years to come. I look forward to our continued engagement and collaboration at future conferences.

(Photo 32)

Global med lab week 2025

Organized by: Public Relations Committee (C-PR)
Collaborators: Task Force Young Scientists (TF-YS)
International Federation of Clinical Chemistry and Laboratory Medicine (C-PR/CPD-IFCC)
https://doi.org/10.62772/APFCB-News.2025.1.4

Dr. BQF. María Pasquel-Moxley
C-PR Chair/CPD-IFCC

Plan for Participation in GLOBAL MEDLAB WEEK 2025 (GMLW2025)

Theme: **Labs Save Lives**

Dates: **21–27 April 2025**

Objective

To unite the global medical laboratory community in celebrating and promoting the indispensable role of laboratory professionals in healthcare.

Participation Plan

1. **Preparation Phase**

- **Mark the Dates:** Reserve 21–27 April 2025 for active participation.
- **Set Objectives**: Define your goals—raising awareness, networking, or educational outreach.
- **Assemble a Team**: Form a local or institutional task force to organize and execute activities effectively.
- **Brainstorm Activities:** Consider webinars, local seminars, community outreach, or creative storytelling projects.

2. **Amplify Awareness via Social Media**

- **Engage with Official Campaigns**:
  - Use the hashtag **#GlobalMedLabWeek** to share updates, photos, or stories.
  - Tag and follow **@globalmedlabweek** on Facebook and Instagram.
- **Content Suggestions:**
  - Post behind-the-scenes snapshots or videos of lab work.
  - Share real-life stories where lab work played a life-saving role.
  - Utilize and repost IFCC's campaign resources.

3. **Participate in Local and Global Events**

- **Global Engagement**:
  - Attend webinars and online discussions hosted by GMLW2025 via the official website.
  - Promote these events among your network to boost participation.

- **Local Outreach**:
  - Organize seminars, exhibitions, or interactive sessions highlighting the contributions of laboratory professionals.
  - Partner with schools or universities to inspire the next generation of laboratory specialists.

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4. Share Your Voice

- **Tell Your Story**:
  - Submit a written or video story about your experiences in laboratory medicine via the *Share Your Story* portal.
- **Create Media Content**:
  - Develop podcasts, infographics or videos that celebrate the importance of laboratories in healthcare, share the experience about Laboratories Save Lives, follow the guidelines provided by IFCC.

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5. Promote Widely

- **Distribute Resources**:
  - Use downloadable posters, flyers, and banners from the GMLW website in your local institutions and online platforms.
- **Community Involvement**:
  - Host awareness sessions to educate patients, healthcare professionals, and the public about the importance of laboratory diagnostics.

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6. Collaborate Globally

- **Coordinate Regionally**:
  - Contact your regional representative for support, ideas, or collaboration.
  - Example Regional Contacts:
    - **Europe**: Maria Eugenia Schroeder | mariaeugeniaschroeder@gmail.com
    - **Africa**: Ronald Kunga | ronaldkhunga@gmail.com
    - **Asia**: Ashish Agravatt | aggravat@gmail.com
    - **Canada/USA** |Dr. Julie Shaw |julshaw@eorla.ca and Dr. Christopher Farnsworth | cwfarnsworth@wustl.edu
    - **Arabia:** Enrique Rodríguez | enrobor@gmail.com
    - **Latin America/Latinoamerica:** Maria P- Moxley | mariapasquelc@yahoo.com

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7. Track and Report Contributions

- **Participation Form**: Confirm your engagement by completing the GMLW2025 Google Form (link)
- **Document and Share**: Capture photos, videos, and feedback during your events. Tag **@globalmedlabweek** to showcase your efforts.

Timeline for Execution

Timeline for Execution	Key Action Items
Timeline	Begin internal promotion of GMLW2025.
Nov 2024	Identify focus areas (social media, webinars, outreach).
Dec 2024	Form teams and assign roles. Finalize initial plans and send to IFCC, and send them to IFCC at the email addresses assigned by region or to the platform that will be indicated in a future email.
Jan 2025	Form teams and assign roles. Finalize initial plans and send to IFCC, and send them to IFCC at the email addresses assigned by region or to the platform that will be indicated in a future email.
Feb 2025	Register for events, gather promotional materials, and confirm logistics, and send them to IFCC at the email addresses assigned by region or to the platform that will be indicated in a future email.
Mar 2025	Launch pre-event social media campaigns using #GlobalMedLabWeek.
Apr 2025	Actively participate in GMLW activities. Post updates and engage globally. **(March 7 is the last day to receive audios, videos)**
May 2025	Submit activity summaries to regional representatives and the Share Your Story portal.

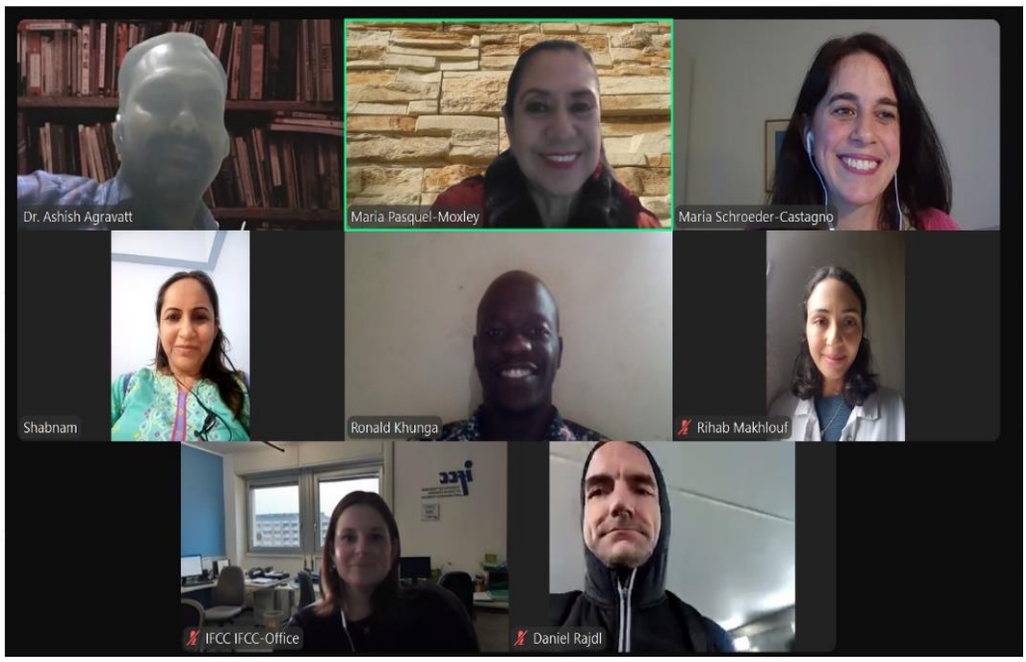
Measurement of Success

- **Social Media Engagement**: Monitor post reach, shares, and hashtag usage.
- **Event Participation**: Track attendance numbers for webinars, local events, and online discussions.
- **Content Creation**: Measure the number and quality of stories, videos, and creative submissions shared globally.

Contact Information

For further details, reach out to:

- **IFCC Office**: Elisa Fossati | elisa.fossati@ifcc.org
- **Regional Representatives**: [Refer to the above Contact List]



(Photo 1)- photo from one of the C-PR meetings, preparing for GMLW 2025.

Ashish Agravatt (IN - member); María Pasquel-Moxley (EC- Chair); María Schroeder-Castagno (UY-Member): Shabnam Dildar (PK- Corr. Member); Ronald Khunga (MW-Member); Rihab Makhlouf (TN- Corr.f Member) ; Elisa Fossati (IFCC ofice); Daniel Rajdl (advisor EFLM).

Share your experiences of how **"Labs Save Lives".**
Thank you for contributing to this IFCC initiative

Maria del C. Pasquel-Moxley
Chair, C-PR, IFCC
Member Ecuador WG-IANT, eNews, eJournal /CPD-IFCC

Young Scientist Interview 1

Maria Immakulata Diah Pramudianti, MD, M.Sc., Sp.PK, Subsp. E.M. (K)

Affiliations & Associations: Clinical Pathology Department, Dr Moewardi Hospital; Sebelas Maret University; Hermina Hospital; and Prodia Laboratory

Head of Stem cell Laboratory of Dr. Moewardi Hospital in Surakarta, Central Java, Indonesia

Head of Clinical Pathology Department of Dr Moewardi Hospital

Secretary of Health Technology Assessment (HTA) of Dr Moewardi Hospital

Member of The Health Research Ethics Committee of Dr Moewardi Hospital

Member of the Indonesian Ministry of Health's Newborn Expert Commission

Health Laboratory Surveyor of LASKESI (Accreditation Agency for Health Facilities throughout Indonesia)

Member-society of Asian Society for Clinical Pathology and Laboratory Medicine (ASCPaLM)

Member-society of Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB)

Chair of Data, Communication, and Publication of Indonesian Association of Clinical Pathology and Laboratory Medicine (IACPaLM)

Chair of IACPaLM Branch in Surakarta

Secretary of Indonesian Association for Clinical Chemistry (IACC) Branch in Surakarta

Member of The Indonesian Medical Association Branch in Surakarta

Lecture of undergraduate and professional medical student Faculty of Medicine, and the clinical pathology specialist education program, Faculty of Medicine, Sebelas Maret University.

Please Introduce Yourself ?

My name is MariaImmakulata Diah Pramudianti, MD, M.Sc., Sp. PK., Subsp. E.M. (K). I am a Clinical Pathologist and Endocrinology metabolic consultant. I completed my medical doctor in 2001, and specialized in Clinical Pathology at the Faculty of Medicine from the Sebelas Maret University in 2010. I then earned a Master of Science in Clinical Medicine from Gadjah Mada University in Yogyakarta and completed my endocrinology metabolic consultant at the Faculty of Medicine from Diponegoro University in Semarang, Central Java in 2013.

Currently, I am affiliated with several institutions, including Dr. Moewardi Hospital, Sebelas Maret University, Hermina Hospital at Surakarta, and Prodia Laboratory at Boyolali, Central Java. My office is located at Dr. Moewardi Hospital on Kolonel Soetarto Street, No. 132 at Surakarta, Central Java, Indonesia.

I am actively involved in various professional organizations. I am honored to serve as a member of the Indonesian Ministry of Health's Newborn Expert Commission and Health Laboratory Surveyor of LASKESI (Accreditation Agency for Health Facilities throughout Indonesia) from 2023 until now. I hold the position of Chairof Data, Communication, and Publication at the Indonesian Association of Clinical Pathology and Laboratory Medicine and I am the Chair of the Surakarta branch of this association form 2019 until now. I am also a member of Asian Society for Clinical Pathology and Laboratory Medicine (ASCPaLM) and Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB), secretary of Indonesian Association for Clinical Chemistry (IACC) Branch in Surakarta, and also a member of the Indonesian Medical Association Branch in Surakarta form 2011 until now.

I have been the Head of the Stem Cell Laboratoryat Dr. Moewardi Hospital from 2024 until now. I serve as the Head of the Clinical Pathology Department at Dr. Moewardi Hospital and the secretary of Health Technology Assessment (HTA) from 2022 until now. I also as a member of the Health Research Ethics Committee from 2018 until now. In my academic role, I lecture both undergraduate and professional medical students, as well as the clinical pathology specialist education program at the Faculty of Medicine, Sebelas Maret University.

As the lecture of medical students, I hold 6 Intellectual Property Rights (IPR) such as ELISA Test Video (2022), POCT Hb Test Video (2022), Supravital Staining Video BCB (2022), Computer Program for PCR Result Filling Guide (2021), Phlebotomy Textbook Edition 2 (2017), and Phlebotomy Textbook Edition 1 (2012). I have authored and co-authored 21 scientific papers published and presented in international and national journal, symposiums, and conferences.

What is your main working focus?

Professionally, I have dedicated my career to enhancing laboratory practices and medical education. This year I have taken on the role of Head of the Stem Cell Laboratory at Dr. Moewardi Hospital in Surakarta, where I am currently preparing the laboratory for operational licensing. In addition, I have been serving as the Head of the Clinical Pathology Unit at the same hospital for over 2 years, where I focus on improving diagnostic services and operational efficiency. My journey in laboratory management began for over 15 years as the Person in Charge of the Laboratory at Prodia Boyolali and for over 10 years at the Laboratory of Hermina Hospital in Surakarta.

In parallel with my professional roles, I am committed to education and mentorship, accumulating 13 years of Lecturer in the Clinical Pathology Department at the Faculty of Medicine Sebelas Maret University Surakarta, where I inspire and guide the next generation of medical professionals.

My dedication extends beyond the classroom and laboratory. I am actively involved in various professional organizations, including serving on the Expert Commission for Newborn Screening at the Ministry of Health of the Republic of Indonesia and as a Health Laboratory Surveyor for LASKESI, the Accreditation Agency for Health Facilities throughout Indonesia for over1 years.

As the member of Indonesian Medical Association (IDI) Surakarta Branch for over 23 years, where I have remained an active member, contributing to the medical community. I am also a member of the Asian Society for Clinical Pathology and Laboratory Medicine (ASCPaLM) and appointed as the Chair of the Information and Communication Division of the Indonesian

Association of Clinical Pathology and Laboratory Medicine (IACPaLM) and the Chair of the IACPaLM Surakarta Branch for over4 years, I work to promote advancements in clinical pathology. My commitment to ethical research practices is reflected in my role as a member of the Health Research Ethics Committee at Dr. Moewardi Hospital Surakarta for over 6 years. Additionally, I contribute to evaluating and implementing health technologies assessmentfor over 2 years at Dr. Moewardi Hospital Surakarta.

What are other areas of interest for you?

I have a passion for gardening, particularly in cultivating flowers around my home. Gardening is an important activity that fosters a connection with nature and contributes to environmental sustainability. By cultivating diverse plants, flowers, and vegetables, I enhance local biodiversity and create green spaces that support wildlife. This practice not only reduces carbon footprints and improves air quality, but also promotes ecological balance within the community. Furthermore, gardening serves as a practical approach to environmental stewardship, encouraging others to engage in sustainable practices. Ultimately, it is a vital means of contributing to a healthier and more aesthetically pleasing environment around my home.

What are your field of interests in biomedical laboratory medicine?

My interests in biomedical laboratory medicine are reflected in my active participation in various professional organizations and committees dedicated to enhancing healthcare quality. As a member of the Expert Commission for Newborn Screening at the Ministry of Health since 2023, I am dedicated to improving early detection and intervention strategies for newborns, which is crucial for their long-term health outcomes. Additionally, my role as a Health Laboratory Surveyor for LASKESI allows me to ensure the quality of health laboratories, contributing to the overall improvement of laboratory standards and practices across Indonesia. As a long-standing member of the IACPaLM, ASCPaLM and IACC, I actively engage in discussions and initiatives that promote best practices in laboratory medicine and actively contributed as an invited speaker at regional, national or international event of biomedical laboratory medicine.

What are your future goals?

My future goals include promoting educational initiatives within professional organizations to develop future leaders in clinical pathology, and expanding collaborative networks with national and international organizations to share knowledge and best practices.

Interviewer

Dr. Ryunosuke Ohkawa, PhD

Professor of Clinical Analysis and Molecular Biology, Graduate School of Medical and Dental Sciences, Institute of Science Tokyo
Committee member of APFCB Communication & Publications Committee.

Young Scientist Interview - 2

Dr. CHAN Chun Hei Toby

Affiliation Newborn Screening Laboratory and Chemical Pathology Laboratory, Hong Kong Children's Hospital
Address 7/F, Block A, Hong Kong Children's Hospital
Professional society's affiliation
2024 Fellow of the Hong Kong Academy of Medicine (Pathology), FHKAM (Pathology)
2024 Fellowship in Chemical Pathology, The Hong Kong College of Pathologists (FHKC Path)
2022 Fellowship in Chemical Pathology, The Royal College of Pathologists of Australasia (FRCPA)
2016 Bachelor of Medicine & Bachelor of Surgery, the University of Hong Kong, MBBS (HK)

Please introduce yourself?

I have been working as a Chemical Pathologist since 2017 after graduating from Bachelor of Medicine and Bachelor of Surgery the University of Hong Kong Li Ka Shing Faculty of Medicine. I had worked in the Chemical Pathology Laboratory of Princess Margaret Hospital and Queen Elizabeth Hospital, and Toxicology Reference Laboratory, now serving as the associate consultant in the Newborn Screening Laboratory and Chemical Pathology Laboratory of Hong Kong Children's Hospital.

Our Newborn screening laboratory has been providing and continuously expanding the scope of newborn screening (NBS) to all the public hospitals with maternity ward, covering the NBS with dried blood spots for 24 conditions of inborn errors of metabolism (IEM, various amino acid disorders, organic acidurias, fatty acid oxidation disorders), spinal muscular atrophy (SMA), severe combined immunodeficiency (SCID), as well as cord blood screening for congenital hypothyroidism and glucose-6-phosphate dehydrogenase deficiency.

What is your main focus?

I am committed to provide quality laboratory screening and diagnostics tests to the clinicians for the best interest of patient care. The concerted efforts of multi-disciplinary care with regular laboratory user meeting, newborn screening user meeting and multi-disciplinary genetics meeting, are vital for the success of the laboratory service. Our lab has received recognition by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) in compliance with the latest ISO 15189: 2022.

Our NBS laboratory has been pioneering the adaptation of state-of-the-art technology in the field of NBS, such as digital droplet PCR for simultaneous precise screening for SMA and SCID,

and the use of second tier next generation sequencing to improve recall rate, false positive rate and false negative rate for IEM conditions such as citrin deficiency.

Our chemical pathology laboratory positioned ourselves as the key contributor for the focused enhancement of pediatric chemical pathology in Hong Kong. We have been relentlessly developing new tests covering lysosomal storage disease enzyme and glycosphingolipids, therapeutic drug monitoring (TDM) for asparaginase, clobazam and mexiletine, tests for inflammatory bowel disease (fecal calprotectin, thiopurine metabolites, TDM for infliximab and adalimumab), and vitamins monitoring, etc.

What else is important to you?

Apart from clinical duty, I am also actively engaged in research and teaching. Our team has published our works in the expanded NBS for IEM and utilization of NGS in NBS field. We are also devoted to uncover salient interpretation of simple chemical test, for example, from recurrent unexplained hyponatremia to the final diagnosis of Nephrogenic syndrome of inappropriate antidiuresis, and recurring cases of mysterious rise of creatinine as a result of local singular dietary habit of preparing meat broth for pediatric oncology patients. The community of chemical pathology thrives on the everlasting knowledge exchange in peer-reviewed journals. I also serve as a lecturer for the teaching of laboratory medicine in the University of Hong Kong School of Professional and Continuing Education. Knowledge succession is another key to pave the way for the future transcendence of laboratory medicine.

What are your interests in biomedical lab medicine?

My interest lies in metabolic medicine and biochemical genetics. The field is rapidly evolving in the past century with the revolutionary technological advancement, and we can expect even more technological singularities in the not so far future.

Early IEM screening and diagnosis is often hindered by the lack of sensitive and specific biomarker. I anticipate that the increasing use of metabolomics coupled with complex artificial intelligence (AI)-enabled biomarker discovery would greatly improve the diagnostic odyssey of these rare inherited conditions.

Another exciting development in laboratory medicine would be the realization of the full potential of next generation sequencing and third generation long read sequencing in NBS, starting the era of “Newborn Sequencing”. Very large-scale projects such as the Babyseq , the UK-NHS-Generation study, the Australian GenSCAN, the Screen4Care EU-IMI project, etc. are ongoing, some had already reported positive findings. The scope of NBS could be potentially extending to all known (and maybe even previously unknown) genetic disorders, which would certainly be a huge stimulus for the growth of laboratory medicine to cope with the diagnostic and follow-up testing demand.

What are your future goals?

In 2024, we had witnessed the start of the AI “earthquake” led by ChatGPT changing the landscape of all business, laboratory medicine would be one of the most benefited sector if

one can grasp this unique opportunity to reshape the laboratory. The Moore's law would probably come into effect for large language model (LLM) and other AI tools soon than previously thought, as evidence by the recent price-cut of DeepSeek. As professional in laboratory medicine, we must be open-minded and prepared to embrace various AI tools into daily practice. The capability of different AI agents in fulfilling current labour-intensive tasks are undoubted, but the well-trained laboratory professionals would always be the cornerstone to establish a highly-efficient futuristic laboratory. My goal would be to brush up knowledge relating to medical AI, LLM and machine learning algorithm, and explore its use to optimize the current NBS programs.

Another goal would be the extension of NBS to locally prevalent inherited conditions, such as Aromatic l-amino acid decarboxylase (AADC) deficiency, Allan-Herndon-Dudley syndrome (also known as MCT8 deficiency) and Wilson disease.

Interviewer

Dr. Vivek Pant

Consultant Biochemist and Head- Research Unit, Samyak Diagnostic Pvt Ltd, Kathmandu, Nepal.
Corresponding member, Task Force Young Scientist, IFCC.
Corresponding member, Task Force on Outcome Studies in Laboratory Medicine, IFCC.
Corresponding member, Communication and Publication division, APFCB

BD Vacutainer® 75th Anniversary – Celebrating Milestones and Embracing New Horizons

Report by:

Sylvia Chen

Marketing Director for Specimen Management at BD (Central, South Asia, and Japan)
Member APFCB-EB

BD celebrated a milestone this year – it's the 75th anniversary of BD Vacutainer® Blood Collection Products! BD patented the first evacuated blood collection tube in 1949. Since then, BD Vacutainer® products have been consistently refined to offer laboratories a portfolio of trusted specimen collection and management solutions that help define clinical excellence and workflow efficiency.

The 75th anniversary celebration of BD Vacutainer® in Singapore was a remarkable event that brought together professionals and industry leaders from across Southeast Asia. The celebration saw a diverse group of over 100 valued healthcare customers from the region coming together to mark this significant milestone. Their presence and active engagement added a special touch to the event, highlighting the strong relationships BD Vacutainer® has built over the years.

Networking and Knowledge Exchange

Spanning over two days from October 9 and 10, attendees had the opportunity to network, share insights, and discuss advancements in the Pre-analytical Phase of specimen collection. The event was filled with insightful conversations and professional exchanges, fostering a collaborative environment where healthcare professionals could learn from each other's experiences.

Agenda Highlights

Dr. Goce Dimeski, Chief Scientist in Chemical Pathology from Princess Alexandra Hospital, Queensland, Australia, shared his insights on the pre-analytical impact on TAT and accuracy, while Ms. Diane Lukito Setiawan, Head of Laboratory Department at Stikom Surabaya, provided her take on the evolution of blood gas analysis. These presentations provided valuable insights and highlighted the importance of pre-analytical processes in ensuring timely and accurate diagnostic results.

Mr. Ian Lim, Regional Product Manager, and Ms. Nurul Nadhrah Jamal, Clinical Product Manager, shared more about BD's unique Pre-analytical Quality Check: Clinical Service Program. They also emphasized the importance of ensuring safety through product availability and showcased the BD Vacutainer® UltraTouch™ Push Button Blood Collection Set.

Guided Demonstrations

A key feature of the event was the guided demonstration on sample collection using the BD UltraTouch™ Push Button Collection along with BD Blood Collection Tubes. This hands-on session allowed participants to experience the latest innovations in specimen collection technology, enhancing their understanding and skills.

Exclusive Tour of the Tuas Manufacturing Plant

One of the highlights of the celebration was an exclusive tour of BD's Tuas manufacturing plant. Guests were given a firsthand look at the company's commitment to quality and efficiency at every stage of production. The tour sparked dynamic discussions on how BD Vacutainer® can continue to meet the evolving needs of its customers and drive improvements in diagnostic accuracy, safety, and patient outcomes.

A Heartfelt Thank You

The event concluded with a heartfelt thank you to all partners, customers, and everyone associated with BD Vacutainer®. The unwavering support and collaboration from these stakeholders have been instrumental in the company's success. The celebration was not just a look back at past achievements but also a call to continue innovating and connecting to advance the world of health™.

Looking Ahead

As BD Vacutainer® moves forward, the connections made during this celebration will serve as a foundation for future collaborations and BD remains dedicated to supporting the needs of its customers and driving advancements in healthcare.

#BDVacutainer #BDVacutainer75 #HappyBirthdayBDVacutainer #75Anniversary

Advancing Laboratory Standards: Our Journey from Manual Verification to Autoverification in Clinical Diagnostics

DOI- https://doi.org/10.62772/APFCB-News.2025.1.1

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Abstract:

Background and objective:

Autoverification (AV) of test results in laboratory forms most important transformative step in enhancing efficiency, accuracy, workflow of the laboratory. Autoverification plays a critical role by providing framework for adapting emerging technologies like artificial intelligence, machine learning. The key milestones in this journey included development of customisable rule based systems, integration with LIS and alignment with quality standards for patient safety. Creating and validating these rules are most demanding steps for setting up an Autoverification system. This article traces journey of Autoverification from its inception to its current integration in daily operations in division of clinical biochemistry to enhance the reliability, efficiency of laboratory services, ultimately contributing to better patient outcomes.

Methods:

The current study was carried out based on analysing previous study results and national/international guidelines. Auto verification was enabled through a software (IM) which was obtained from Data Innovations and was customised based on our request to formulate rules according based on need. The simulation results obtained indicated that that the framework designed worked as expected. The Auto verification was performed using actual patient results.

Results:

Number of rules were created for validation. Our results showed that there was a gross reduction of manual verification and review rates after introduction of AV and number of inpatient results were evaluated based on delta check algorithms set. There was a gross reduction in the turnaround time of routine tests with improved accuracy contributing to the efficiency of the laboratory and improved customer satisfaction.

Interpretation and conclusion:

Designing rule based system is critical for successful AV. The AV system can halt the samples with abnormal results for manual verification aiding in enhanced patient safety and improved efficiency.

Key words: Autoverification, chemistry, rule-based systems, efficiency, productivity, manual verification

Introduction:

The clinical laboratory serves a key role in healthcare, bridging the gap between patients and clinicians. However, laboratories worldwide face the challenges of increased workloads and the accompanying pressure to deliver timely, accurate, and consistent reports. Over the past decade, laboratory medicine has undergone substantial evolution, with advanced analytical instrumentation taking centre stage in technological progress. However, global statistics indicate that over 65% of laboratory errors occur outside the analytical stage, predominantly in the pre- and post-examination phases. Thus, automating these phases is instrumental in reducing errors and enhancing patient safety.

Autoverification in clinical laboratories refers to the automated process of validating and releasing test results directly to healthcare providers, minimizing manual review and allowing staff to prioritize high-impact tasks. This post-analytical process represents the final quality assurance step before results are archived in the patient data repository (1). By applying predetermined criteria to all test results, it enhances error detection, reduces turnaround time, and increases work efficiency by allowing laboratory staff to focus on cases that truly require manual intervention (2)

At MIOT Hospitals, a 1,000-bed tertiary care center, we embarked on a three-month project to standardize the pre- and post-examination phases through total laboratory automation. Our goal was to design and validate an Autoverification algorithm for routine biochemistry, immunoassays, and serology testing. This transition has markedly streamlined laboratory workflows, reduced errors, and improved turnaround times—ultimately contributing to enhanced patient safety."

Materials and Methods:

In the planning phase, we audited our laboratory workflow. The study progressed through two phases: the pre-automation phase, involving manual report release and verification, and the automation phase, implementing Autoverification. The laboratory caters to a wide range of mixed populations 24x7 and conducts around 90,000 tests per month. All chemistry, immunoassay, and serology assays were performed on VITROS 5600 and VITROS XT 7600 analyzers from QuidelOrtho using micro-slide, micro-tip, and micro-well technologies. Auto verified results were transferred to our middleware, Instrument Manager by Data Innovations, interfaced with the LIS (IQVIA) and VITROS analyzers.

Auto verification Algorithm Setup:

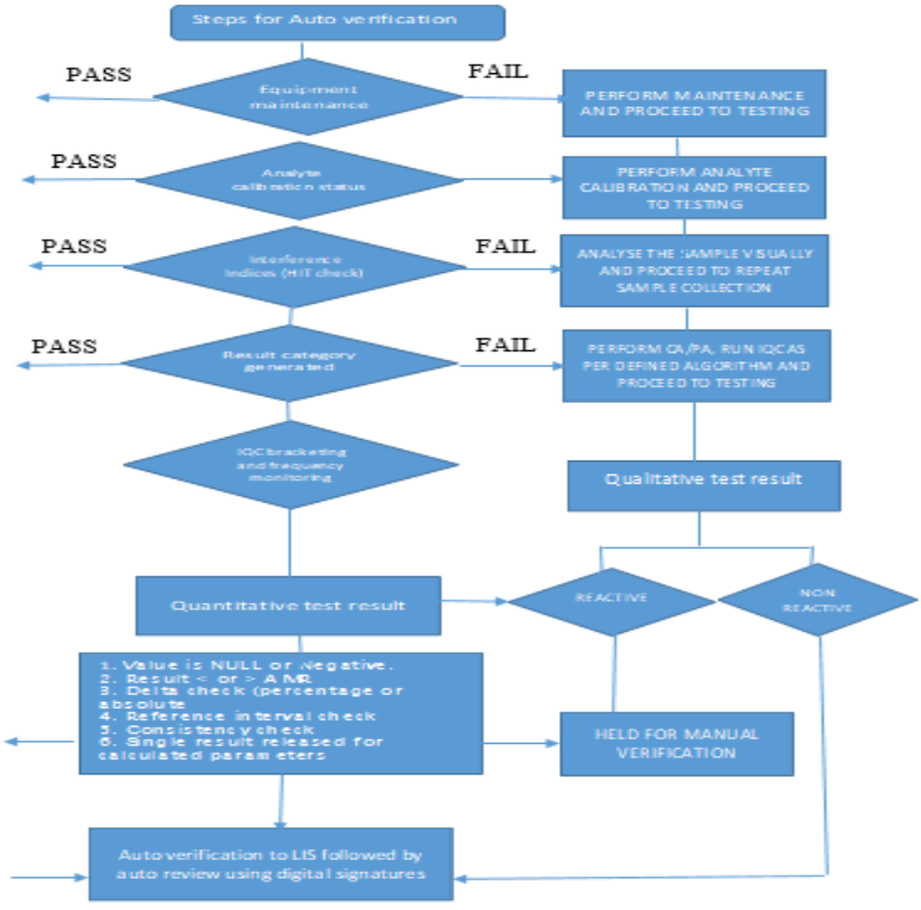
The Auto verification setup involved a two-phase approach. First, the software phase, where live clinical specimens were allowed for rule simulation and algorithm refinement (single and combination rules), followed by hardware implementation. The algorithm development was done based on CLSI Auto 10A guidelines (3) and accreditation requirements based on ISO 15189:2022 standards (4). Criteria included maintenance and calibration status, internal quality control, analytical measurement ranges, critical value alerts, delta checks, and consistency checks (see Table 1 for specific cross-check criteria). Quality checks for haemolysis, icterus, and turbidity indices ensured that all results maintained analytical integrity.

Specimen Selection:

To thoroughly test the Autoverification algorithm, a wide variety of clinical specimens were selected. This included specimens with low or high concentrations of specific measurands, those affected by haemolysis, icterus, or lipemia (HIT) interferences, and samples that fell outside the analytical measurement range. Additionally, specimens showing mild variations from previous results (delta checks), those with critical alert values, and samples requiring dilution due to high concentrations were included. Internal quality control (IQC) failures and the status of results processed within the defined period were also analysed.

Laboratory Information System (LIS):

Our hospital utilizes the IQVIA software for LIS which is equipped with foundational rules for manual result verification and this served as the baseline for algorithm development. Essential components of the verification protocol included simulation testing on clinical specimens, algorithm approval, thorough documentation, and subsequent implementation and maintenance of the auto verification rules. Middleware was interfaced with the LIS software, enabling the documentation of common auto verification challenges—such as specimen rejections, instrument error flags, and decimal transcription errors—throughout the verification process.



Autoverification Algorithm Criteria: All the algorithms designed for Autoverification in middleware are colour coded aprropriately for the user to be made aware of the results failing the AV criteria. Some of the algorithms that are programmed in the middleware include:

A1: Maintenance and Calibration Compliance

The Autoverification (AV) system is programmed to track routine equipment maintenance and analyte calibration requirements within the middleware. Testing is restricted if maintenance is overdue, or calibration frequency has been exceeded and since the instruments are connected on track, the tests are automatically forwarded to the next equipment where the quality criteria were met as per the predefined standards.

A2: Internal Quality Control (IQC) and Calibration

Our laboratory follows NABL 112:2019 guidelines for performing IQC across all analytes under AV. The number of levels of IQC and time intervals are also mapped in the middleware based on accreditation requirements. IQC results are automatically relayed to the Bio-Rad Unity real-time software through the middleware, and SQC rejection rules are embedded in the middleware. If an QC outlier is detected, samples are redirected to another instrument to prevent result recalls. Alerts are generated in the middleware for outliers and also when IQC is pending based on preset frequency, preventing sample analysis until IQC completion or corrective action is initiated.

A3: Analytical Measurement Range (AMR)

The AMR, specifying the concentration range that can be directly measured without further treatment, is pre-set in the middleware. Results outside this range are held for manual verification, and any results requiring dilution are held in the middleware for further dilution or review.

A4: Critical Values

Critical results flagged by the middleware for immediate attention are held and communicated promptly to healthcare providers, as required for patient safety and as per accreditation standards. The middleware records the communication details, including time of reporting and a confirmation read-back to ensure information accuracy, aligning with CLSI GP 47(5) requirements.

A5: Delta Check

Delta checks are evaluations which compare consecutive results for the same patient. They also help to detect sample misidentification, contamination, or significant clinical changes. Each analyte has programmed delta limits (percentage or absolute) in the middleware based on CLSI EP 33 guidelines (6) and BV criteria (7) and any results exceeding these limits are held for manual review.

A6: Consistency Check

Consistency checks are programmed to cross-verify related test results for accuracy, ensuring coherent, reliable results across correlated tests, as specified in the verification protocol's Table 1.

Table: 1 Specimen Consistency check:

Ethylenediaminetetraacetic acid (EDTA) contamination	Potassium > 7 mmol/L, perform reflex testing for calcium and ALP (calcium < 3.0 mg/dL, or ALP < 50 U/L) indicating contamination
Discrepant test results	ALT/AST ratio < 1.0 for normal patients Albumin / globulin ratio < 1.0 , indicating AG ratio reversal and instructs staff to proceed to serum protein electrophoresis
Glomerular filtration rate	It is correlated together with the creatinine test and the stage of CKD based on KDIGO guideline [8] is evaluated and provided as an advisory service to patients also
Indirect bilirubin	Indirect bilirubin is a direct measure in VITROS system and is evaluated together with direct bilirubin and total bilirubin
Glucose	Post prandial value less than the fasting value
Calculated parameters with ratio like microalbumin, kappa lambda etc.,	When single parameter alone is reported, results are held in middleware till another parameter is completed for ratio calculation
Triglyceride value > 400 mg/dL	VLDL will not be calculated based on Friedwald equation

A7: ADVISORY SERVICES

These are consultative services aimed at optimising and implementing Autoverification process. The services are programmed as comments in the middleware aiding the staff in reporting. Some of the advisory services programmed in the middleware are given below in table 2:

Table:2 Advisory services

Iron profile Iron low, transferrin high, TIBC high, Ferritin low	Probably suggestive of iron deficiency anemia, correlate with smear study and CBC
Iron high, transferrin low, TIBC low, Ferritin high	Probably suggestive of iron overload/haemolytic anaemia, correlate with smear study and CBC
Iron low, transferrin low, TIBC low, Ferritin high	Probably suggestive of anaemia of chronic disease, correlate with smear study and CBC
Thyroid profile F T3 low, F T4 low, TSH Low	Hypopituitarism
F T3 low, F T4 low, TSH High	Primary hypothyroidism, suggested correlation with anti TPO, anti Tg
F T3 High, F T4 High, TSH Low	Primary hyperthyroidism
F T3 High, F T4 High, TSH High	Hyperpituitarism/Pituitary macroadenoma
F T3 Normal, F T4 Normal, TSH High	Subclinical Hypopituitarism
F T3 Normal, F T4 Normal, TSH Low	Subclinical Hypopituitarism

A8: Reference Range Verification

Reference intervals, or ranges, are used by physicians to interpret patient test results, representing values that fall within the range observed in 95% of a healthy population. Values within this range are considered within normal limits (WNL). Limits exceeding WNL are designated as the upper reference limit (URL) or upper limit of normal (ULN), while values below WNL are the lower reference limit (LRL) or lower limit of normal (LLN). All test results falling outside these reference ranges are flagged in the middleware for manual verification.

A9: Interference (HIT Index) Verification

Every sample processed on the VITROS analyzers undergoes automatic assessment for haemolysis, icterus, and turbidity (HIT) indices using VITROS' Intellicheck technology. Samples with interference levels exceeding manufacturer-defined thresholds are held in the middleware, requiring manual verification to ensure accuracy before release.

A10: SEROLOGY TESTING

Qualitative assay results reported as reactive will be held by the system and will require manual intervention for authentication, in accordance with the criteria specified in the Autoverification Algorithm. Results that are non-reactive will be automatically authenticated if they fall within the AV rules.

RESULTS AND DISCUSSION

During the study period, the Clinical Biochemistry division received a total of 2500 samples and performed [2,70,000] tests. The efficacy of automation in Autoverification was evaluated through several factors, including the rate of Autoverification, rate of manual verification, reasons for manual verification, any report amendments, manpower requirements, and the overall improvement in turnaround time (TAT) in the laboratory.

Auto verification Success Rate: AV success rate was determined as a percentage of total number of tests auto verified against total number of tests performed in the division per day. The rate of auto verification were studied for routine chemistry assays, routine immunoassay tests and serology assays and the rates are depicted in table 3.

Table: 3 Auto verification Success rate Vs Manual verification

Test Type	Auto verification (%)	Manual Verification (%)
Routine Chemistry Assays	78%	22%
Routine Immunoassays	94%	06%
Routine Serology Assays	88%	12%

Reasons for Manual Verification

The most prevalent causes for holding test results in the middleware for manual verification are outlined in figure: 1

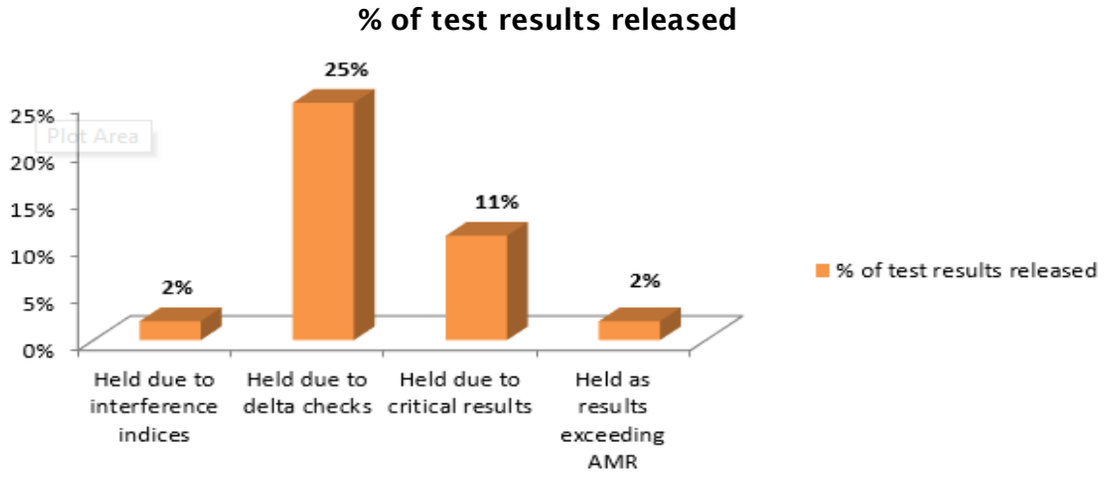


Figure: 1 Cause analysis for manual verification of test results

Cross-verification of patient results by authorized signatories indicated a 98% agreement rate between manual and auto verified results. Notably, discrepancies primarily arose in serology assays and TSH tests, largely due to insufficient patient history and reactive results, with delta check failures being the most common reason for results being held as depicted in table 4.

Reason for Delta Check	% of Test Results Held
Specimen Related Issues (diluted/wrong)	2%
Misidentified Samples	1%
Analytical Issues	2%
Clinically Significant Changes	20%
Total	**25%**

Improvement in Turnaround Time

The implementation of Auto verification resulted in significant improvements in TAT, as illustrated in Fig. 2:

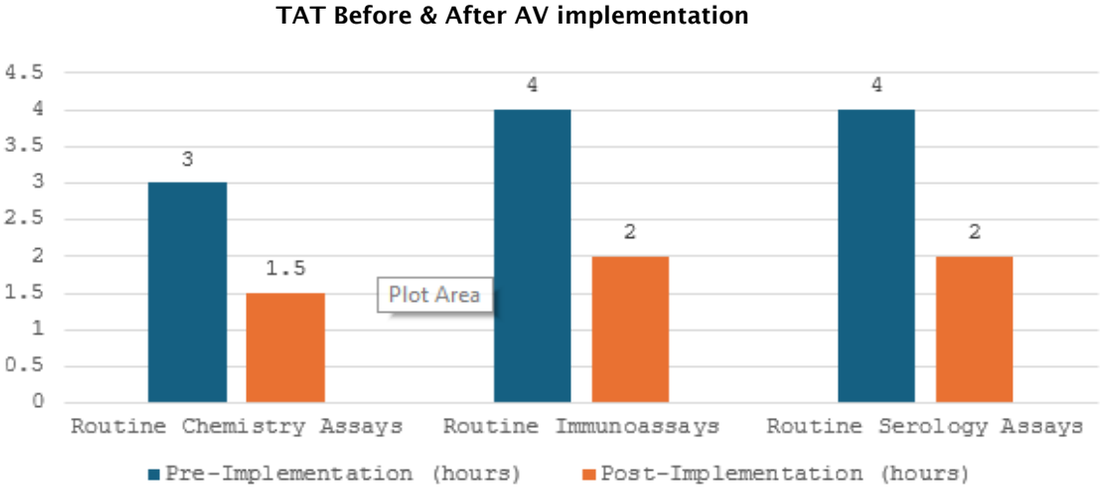


Figure: 2 TAT improvement pre and post AV implementation

Discussion:

Auto verification uses complex rule-based systems to validate test results that do not require a manual verification. Currently, laboratories use AV in different groups of tests, including routine tests which are biochemistry, immunoassays, haematology, coagulation, blood gas, and urinalysis (9). All the algorithms developed were validated and approved by the medical director before use and were also regularly reviewed and verified as per ISO 15189:2022[4] requirements.

AV has shown improved benefits with respect to test quality, error rates reduction, decreased TAT thereby improvement in lab efficiency. Our study focussed primarily in developing an algorithm to reduce pre analytical errors such as sample mix-up, anticoagulant contaminations, diluted and lysed samples as was evident in the consistency check algorithm developed in Table:1 apart from IQC outliers, delta check limits, AMR, reference ranges, critical alerts, sample indices etc. Many previous studies have also explained algorithms based on analytical measurement range, critical values, error codes encountered, delta check, sample indices etc.(10,11)

Auto verification Success rate:

Our results show a 78% AV rate for routine chemistry tests followed by 94% for immunoassays and 88% for serology assays as depicted in Table 3. Similar AV rates were obtained in studies done by Rashmi and Anurag (1) who reported AV rate of 53.7-85.4%. Another study by Dr.Subhosmito Chakraborty (12) shows an AV rate of 78% for all metabolic tests studied in his setup. The AV success rate reported in different studies have shown wide differences (13-15) probably due to using different result limit checks and delta check limits and developments in AV rules. Similar to this study, Shih et al (16) reported the AV rate to be as high as 95% for all the test results, which is higher than the findings of this study. This difference could be because in their laboratory, acceptable range for the delta check and limit check for each test item might be different from ours.

A detailed analysis of routine chemistry assays indicated that tests such as AST, ALTV, amylase, lipase, HDL, PSA, anti HIV testing and LDL had the highest Auto verification rates. Conversely, tests like urea, creatinine, sodium, potassium, chloride, HBsAg, Anti HCV, and others showed lower validation rates, correlating with our institution's focus on nephrology (45%) and hepatic (25%) patients, alongside departments such as oncology, diabetes, and orthopedics.

Manual verification:

In design of an AV algorithm, one of the important issues is performing an in-depth root cause analysis of manually verified test results. Manual verification is a time-consuming activity with built-in subjectivity and cannot provide sufficiently accurate verification of test results (14) When a large number of results especially in a large Mult speciality hospital are pending for review, fatigue can develop, and this is considered to be a high risk factor for laboratory errors (17). In our study, the most common reasons for non-validated results were delta check, IQC bracketing, reference range check limits and serum indices respectively.

The less common reason for manually verified test result was critical alert (2%) among the tested analytes (Figure 1). Similar results were also obtained in a study done by Rimac et al. who reported that among 31 different biochemical tests, the least common reason for non-validated results was the critical value (2%) (18).

Delta check:

The laboratory had further attempted to identify the reason for the major junk of results held due to establishment of delta check limits and the reason was identified to be clinically significant changes within the individual as major cause (Table4). Several studies have recommendations defined on use of delta checks in designing AV algorithms (19,20,21).

In our present study, the delta check limits were determined from the biological variation database. The delta check limit used for the CREA test was ± 15%, and the AV rates were between 60% and 79%. This was in comparison to previous study in which delta check limits were evaluated as < 20% and AV success rates between 50% and 75% were obtained and also studies by Onlu Gul B et al where the rates were between 65 and 79% with a delta check of ± 13%. The AV success rates reported in multiple studies have shown differences (22,23,18)primarily due to using different delta check limits and developments in AV rules over time.

Agreement rate:

Cross-verification of patient results by authorized signatories indicated a 98% agreement rate between manual and auto-verified results. Notably, discrepancies primarily arose in serology assays and TSH tests, largely due to insufficient patient history and reactive results, with delta check failures being the most common reason for results being held as depicted in table 3. Similar studies of degree of agreement were done by seven different reviewers and the agreement rate was found to be significant between 79% to 88% indicating a stable algorithm. Mohy-Sediq et al. compared AV system results to results provided by 4 reviewers, and the agreement rates were between 73% and 77%, which were lower than those in our study (24) .The validation of AV rules is crucial in ensuring that the AV system operates as intended and requires high attention to detail.

We evaluated the efficacy of AV by assessing the significant improvement in TAT for all routine assays, and immunoassays which showed around 97% TAT improvement for chemistry assays and 96% for immunoassays(Figure 2) when compared to the previous performance of the laboratory. Similar studies post-AV implementation have depicted an 88.28– 97.32% for immunoassays and 82.7–95.68% for routine chemistry parameters.

The result recall rates due to failed IQC results improved from 4.3 sigma to 6 sigma, attributable to the introduction of IQC bracketing. Automated documentation of IQC outliers via transfer to Bio-Rad Unity real-time software significantly reduced the manual workload associated with transcription thereby minimizing errors and rate of recalls. The reduced error rates as evidenced by the decreased number of amended reports reduced the need for manual verification. In this study, we found that for verification of around 2500 tests per day, an average of 6-7 manhours per signatory is being spent which has been reduced to around 3 hrs per day by AV. The extra time generated was used for study purposes, staff training and competency-related activities, verification protocol design for new tests etc.

Risk Management in Auto verification

Every algorithm within the auto verification process designed in the laboratory has an effective risk management strategy, enabling the rapid suspension of automated selection, review, and release of test results so that patient care is not at risk. This is also a mandatory requirement of accreditation of laboratories as per ISO 15189:2022(4).

Conclusion:

The implementation of auto verification (AV) in our clinical laboratory has significantly enhanced operational efficiency, accuracy, and patient safety. The AV system successfully reduced manual verification rates, with success rates of 78% for routine chemistry assays, 94% for immunoassays, and 88% for serology assays, thereby allowing laboratory personnel to focus on critical tasks. Notably, the turnaround time (TAT) for routine tests improved by 35%, directly contributing to faster clinical decision-making. Delta check algorithms and consistency checks reduced pre-analytical errors, with a 98% agreement rate between manual and auto-verified results, underscoring the system's reliability. These advancements affirm that AV, when properly designed and implemented, streamlines laboratory workflows and ensures consistent quality standards, ultimately improving

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Voice of Laboratory Professionals: Surveying Laboratory-Clinician Interactions in Nepal

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Abstract

Background & Objectives

The interaction between laboratory personnel and clinicians is crucial for effective patient care. This study aimed to explore the nature and effectiveness of such interactions by surveying laboratory professionals in Nepal.

Methods

A cross-sectional survey was conducted using a self-administered questionnaire (attached), which was distributed to participants during the annual congress of the Nepalese Association for Clinical Chemistry in April 2024. A total of 32 complete responses were collected for analysis.

Results

The survey found that daily communication between laboratory personnel and clinicians occurred in 37.5% of cases, primarily for test result discussions, case consultations, and test requisition clarifications. Over half of the respondents rated communication as effective or very effective. However, barriers such as unclear communication, time constraints, and differences in understanding of results were identified.

Interpretation & Conclusion

This survey highlights the need for better communication between lab personnel and physicians in Nepal. Strategies such as regular meetings, educational initiatives, and standardized protocols

can improve collaboration, advance laboratory medicine, and enhance lab professionals' role in patient care.

Keywords: Laboratory clinician interaction; Patient care; Survey; Nepalese Association for Clinical Chemistry (NACC)

Introduction

In clinical settings, laboratory personnel and clinicians need to work closely together to ensure accurate test interpretation, timely decision-making, and appropriate patient management. There are various reports which highlight the importance of active communication between laboratory physicians and clinicians thus saving patient lives (1).Despite the significance of this collaboration, studies indicate that communication gaps and a lack of structured interaction may hinder optimal patient care (2).

In current Nepalese healthcare settings, the role of laboratory personnel has evolved beyond merely processing test results to become integral partners in patient management (3).This evolution necessitates a collaborative approach, where laboratory professionals and clinicians work closely to interpret test results, discuss patient cases, and make informed decisions. However, challenges such as time constraints, unclear communication channels, and varying levels of understanding of laboratory data often hinder effective collaboration. Despite the recognized importance of this interaction, there is limited data on how these collaborations function in the Nepalese context, what challenges are faced, and what opportunities exist for improvement.

By surveying registered laboratory professionals, this research provides insights into the current challenges, the existing practices, and potential strategies for improvement. Understanding these factors is crucial to fostering a more integrated approach to patient care, ultimately contributing to the advancement of laboratory medicine in the country.

Method

This study employed a cross-sectional survey design which was conducted during the annual congress of the Nepalese Association for Clinical Chemistry (NACC) held in April 2024 in Kathmandu (4). The target population consisted of registered laboratory professionals from various clinical laboratories throughout the country. A structured; self-administered questionnaire was developed for data collection. The questionnaire consisted of 10 questions (Attached as a Supplementary document) focusing on aspects of clinical and laboratory interaction, including the frequency and purpose of communication, effectiveness, challenges faced, and suggestions for improvement. The questions were developed based on a review of relevant literature and expert consultation in the field of laboratory medicine. The questionnaire was reviewed and approved by an independent expert in laboratory medicine to ensure its validity. All participants provided informed consent before completing the questionnaire. Participation in the survey was voluntary, and anonymity and confidentiality were strictly maintained throughout the study.

The questionnaire was distributed in printed form to the attendees during the congress. Respondents were allowed to select multiple options where applicable, and the responses were collected and reviewed for completeness. Data analysis was performed using descriptive statistics to summarize the responses. All analyses were conducted using Microsoft® Excel® 2019. The frequency distribution of responses was calculated for each question, and common themes and patterns were identified to provide insights into the state of laboratory-clinician interactions and potential areas for improvement.

Results

A total of 32 complete responses were collected. The participants included 18 individuals from various medical colleges and 14 from private laboratories. The years of experience in laboratory medicine varied among the participants, with 19 individuals having 1–5 years of experience, 4 participants having 6–10 years, 6 participants with 11–15 years, and 3 participants with 16–20 years of experience.

When asked how often laboratory personnel interact with physicians in their institution, only one-third of them reported daily communications. (Figure 1) The primary purpose of interaction is shown in Figure 2. When asked about the effectiveness of communication between laboratory personnel and clinicians in their institution, half of the respondents reported that the communication was either effective or very effective. (Figure 3)

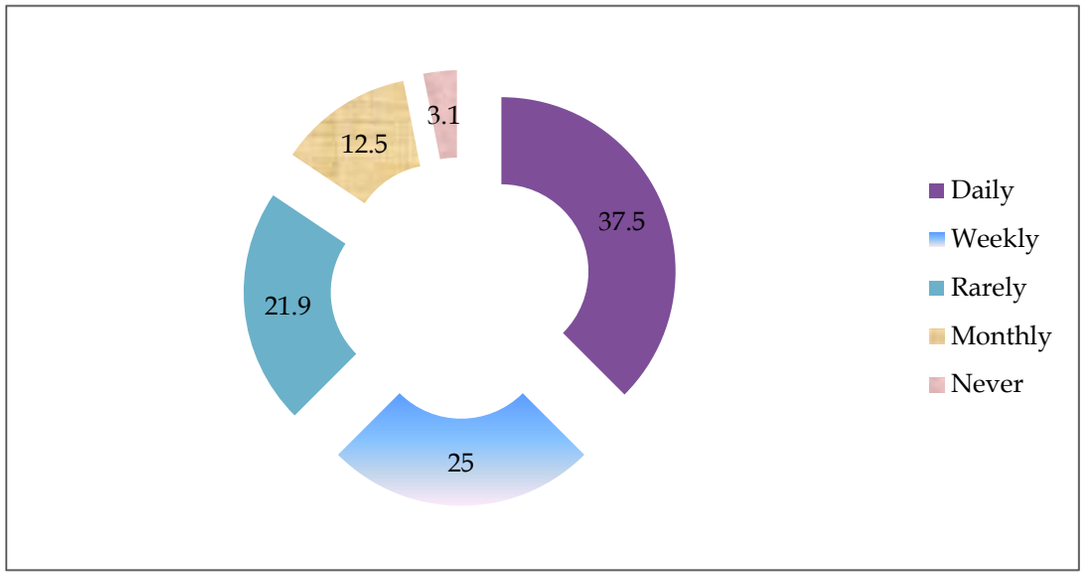

Figure 1: Frequency of interaction between laboratory personnel and clinicians in Nepal

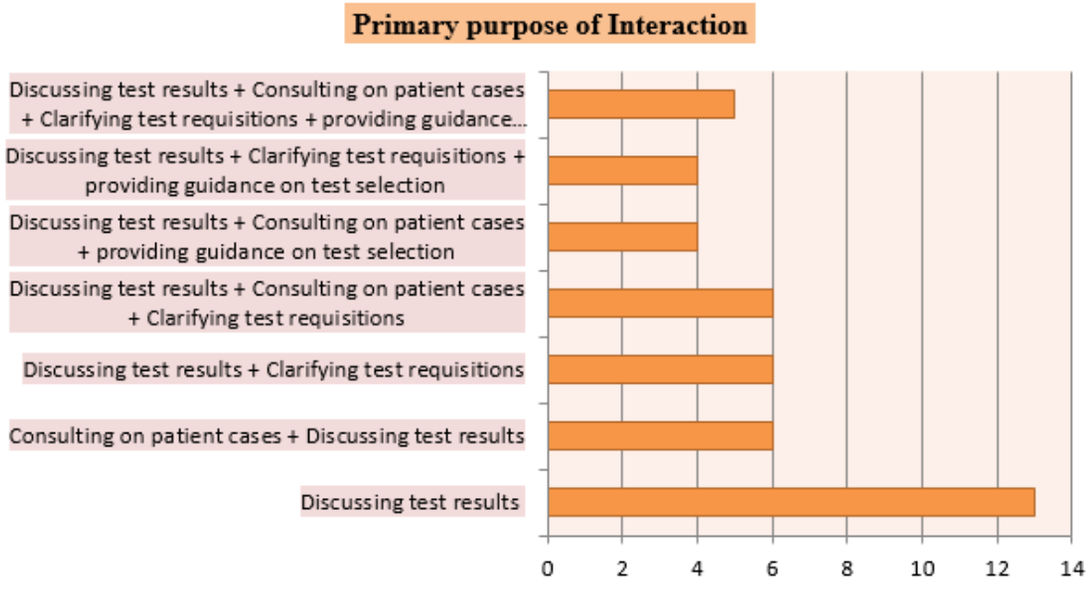

Figure 2: Primary purpose of interaction (Y-Axis) between laboratory personnel (X-axis) and clinicians

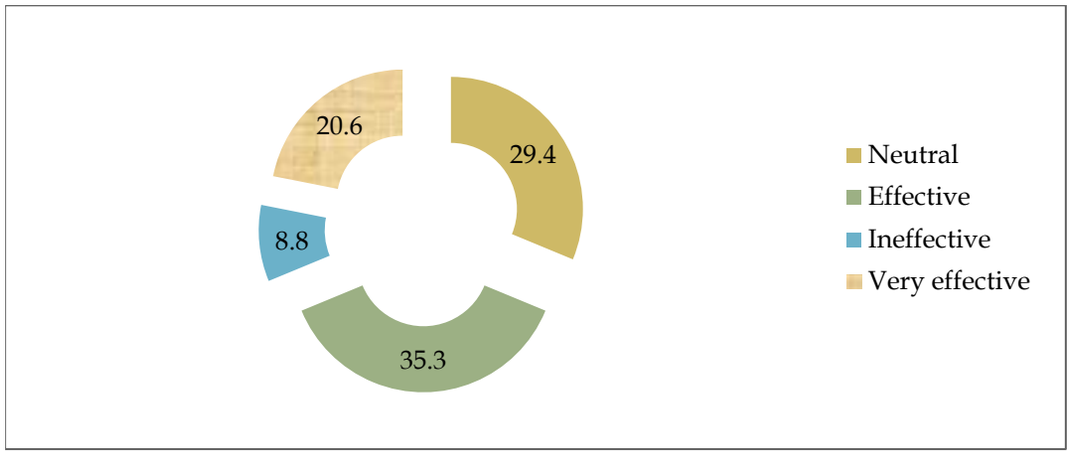

Figure 3: Effectiveness of communication between laboratory personnel and clinician

When asked about the challenges faced during interactions, the major issue identified was a lack of clear communication between laboratory personnel and physicians. (Figure 4)

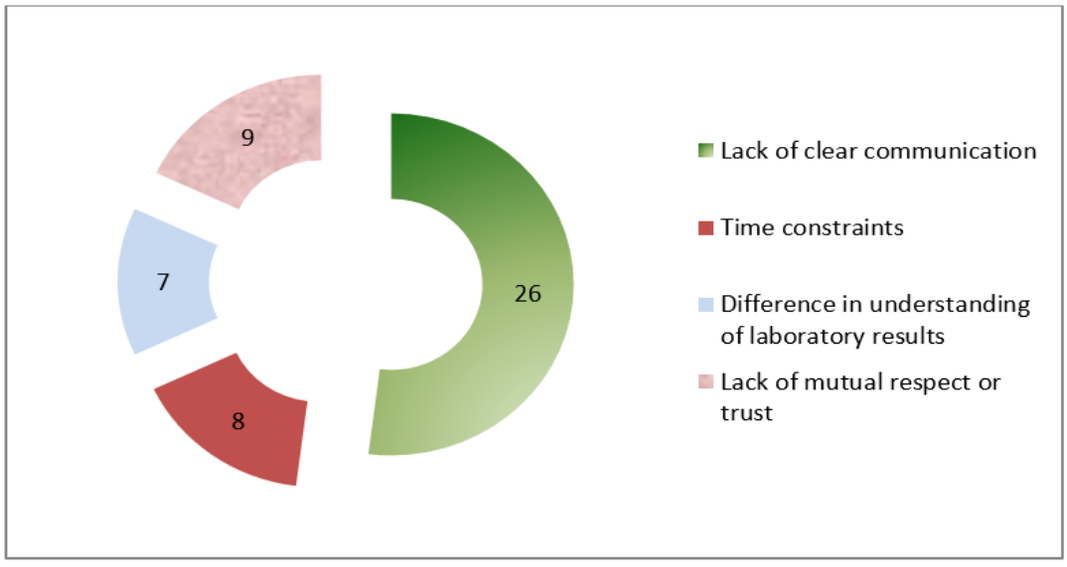

Figure 4: Challenges faced by laboratory personnel during their interaction with clinician

Several measures to improve the interaction were suggested by the respondents as shown in Figure 5

The potential benefits of enhanced collaboration between laboratory personnel and clinicians are highlighted in Figure 6.

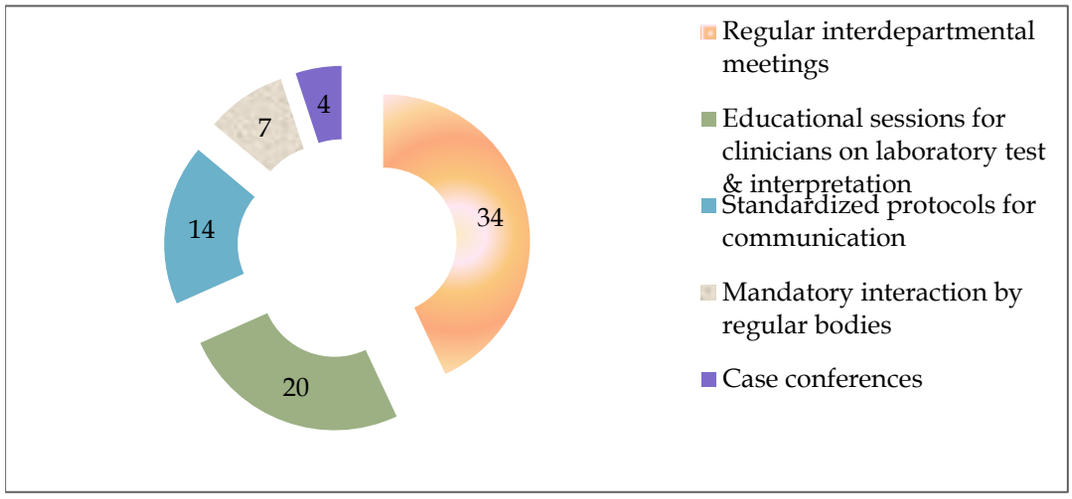

Figure 5: Measures suggested by laboratory personnel to improve interaction with clinician

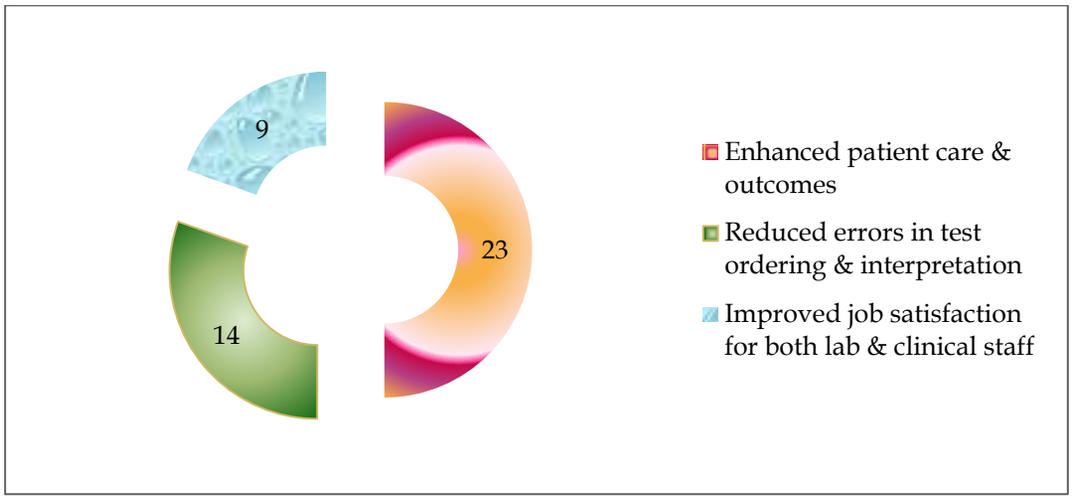

Figure 6: Benefits of collaboration between laboratory personnel and clinician

When asked about the need for additional training or education to facilitate better interaction, 90% of respondents expressed a desire for training for both laboratory personnel and clinicians. Similarly, when participants were asked about existing practices or initiatives in their institution that promote collaboration between laboratory personnel and clinicians, a few notable examples were shared. Overall, collaboration was reported as limited, with most interactions occurring primarily when abnormal test results needed discussion. However, some departments had implemented informal or ad-hoc practices to encourage communication. Notable initiatives included the introduction of newborn screening for inborn errors of metabolism, which enhanced collaboration with pediatric physicians. Another example was the creation of a Viber group for real-time communication between ICU and laboratory staff, as well as daily morning conferences involving interdisciplinary teams, which improved coordination.

When participants were asked for suggestions and feedback on improving interactions between laboratory personnel and physicians, several key recommendations were made. Respondents emphasized the importance of holding regular session meetings and case conferences to discuss clinical findings and laboratory test orders. To ensure better communication, participants recommended the implementation of regular communication channels and quality control measures, such as the verification of lab reports by biochemists, pathologists, and microbiologists. Additionally, there was a call for more educational sessions and continuing medical education programs to further enhance collaboration and improve interactions between laboratory staff and clinicians.

Discussion

The findings of this survey offer valuable insights into the current state of interaction between laboratory personnel and clinicians in Nepal. While the frequency of communication varies, a significant portion of laboratory staff report daily (37.5%) or weekly (25%) interactions. However, it is concerning that 21.9% of respondents interact rarely or only on a monthly basis, and 3.1% report no interaction at all. Those who report daily interactions are often from medical colleges, where clinicians are more readily available and case discussions are common among faculty. In contrast, many laboratories, particularly in private settings, lack consistent collaboration, which is crucial for effective patient care and decision-making. Private labs, in particular, face challenges due to limited access to clinicians, who are either unavailable or do not respond to calls, unlike in the medical college environment where

clinicians are more accessible. This disparity may explain the poor communication observed in some settings.

In our study, a common theme emerged in which many laboratory personnel often initiated contact with clinicians to clarify test requisitions and discuss test results. This aspect of communication is equally important, as it ensures that the correct tests are ordered based on the clinical context, preventing potential errors or misinterpretations that could arise from ambiguous or incomplete test requests. Clarifying test requisitions also aids in optimizing resource utilization within the laboratory, reducing unnecessary testing, and improving overall efficiency.

The effectiveness of communication was generally rated positively however, 29.4% of participants rated the communication as neutral, and 8.8% as ineffective, which points to significant room for improvement. Addressing the issues highlighted by the respondents who rated communication as neutral or ineffective could involve conducting further qualitative assessments to identify specific barriers and implementing targeted interventions to improve communication flow. The barriers identified, such as lack of clear communication, time constraints, and differences in the understanding of laboratory results, are consistent with challenges reported in similar studies globally (5-7).

The most frequently mentioned measure to improve interactions was the establishment of regular meetings, followed by educational sessions on laboratory tests and interpretation. Standardized protocols for communication, case conferences, and structured multidisciplinary team approaches were also highlighted as essential to improving collaboration. This is consistent with the growing recognition that integrated care models lead to better patient outcomes and more efficient healthcare delivery (8). The benefits of improved collaboration were also clear, with participants emphasizing enhanced patient care and outcomes, reduced errors in test ordering and interpretation, and improved job satisfaction.

Conclusion

This survey underscores the need for more structured and frequent communication between laboratory personnel and physicians in Nepal. While many interactions occur regularly and serve critical purposes such as discussing test results and consulting on patient care, significant challenges such as communication gaps, time constraints, and misunderstandings persist. Regular meetings, educational initiatives, standardized communication protocols, and case conferences were identified as effective strategies to enhance collaboration. Establishing these practices will contribute to advancing laboratory medicine in Nepal, ensuring that laboratory professionals play an even more crucial role in patient management and treatment.

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Supplementary Document: Questionnaire used in this Survey

1. **Personal Information:**
   - Name:
   - Position/Title:
   - Institution/Hospital:
   - Years of Experience in Laboratory Medicine:

2. **Frequency of Interaction:**
   How often do laboratory personnel interact with physicians in your institution?
   - Daily
   - Weekly
   - Monthly
   - Rarely
   - Never

3. **Purpose of Interaction:**
   What is the primary purpose of the interaction between laboratory personnel and physicians in your institution? (Check all that apply)
   - Discussing test results
   - Consulting on patient cases
   - Clarifying test requisitions
   - Providing guidance on test selection
   - Other (please specify):

4. **Effectiveness of Communication:**
   How would you rate the effectiveness of communication between laboratory personnel and physicians in your institution?
   - Very effective
   - Effective
   - Neutral
   - Ineffective

5. **Challenges in Interaction:**
   What are the main challenges faced during the interaction between laboratory personnel and physicians? (Check all that apply)
   - Lack of clear communication channels
   - Time constraints
   - Differences in understanding of laboratory results
   - Lack of mutual respect or trust
   - Other (please specify):

6. **Improvement Opportunities:**
   In your opinion, what measures could be taken to improve the interaction between laboratory personnel and physicians? (Check all that apply)
   - Regular meetings or case conferences
   - Educational sessions on laboratory tests and interpretation
   - Standardized protocols for communication
   - Interaction should be made mandatory by regulatory bodies
   - Other (please specify):

7. **Interaction Benefits:**
   What benefits do you believe could arise from improved collaboration between laboratory personnel and physicians? (Check all that apply)
   - Enhanced patient care and outcomes
   - Reduced errors in test ordering and interpretation
   - Improved job satisfaction for both laboratory and clinical staff
   - Other (please specify):

8. **Training Needs:**
   Do you think there is a need for additional training or education for laboratory personnel and/or physicians to facilitate better interaction?
   - Yes, for laboratory personnel
   - Yes, for physicians
   - Yes, for both
   - No

9. **Current Practices:**
   Are there any existing practices or initiatives in your institution that promote collaboration between laboratory personnel and physicians? If yes, please describe briefly.

   .....

   .....

10. **Suggestions and Feedback:**
    Please provide any suggestions or feedback you have for enhancing the interaction between laboratory personnel and physicians in your institution or within the clinical chemistry community in Nepal.

APFCB Webcast & e-Learning Programme-Report 2024

https://doi.org/10.62772/APFCB-News.2025.1.5

Report by:

Dr. Deepak Parchwani

Coordinator, APFCB Webcast & e-Learning Programme

Member APFCB C-CP

The Asia-Pacific Federation of Clinical Biochemistry and Laboratory Medicine (APFCB) Communication and Publication Committee (C-CP) successfully initiated the APFCB Webcast & e-Learning Programme in 2024, fulfilling one of its key proposals made at the beginning of the year. This unique initiative aims to foster knowledge sharing and professional development among laboratory medicine professionals across the Asia-Pacific region. The programme recordings are available on APFCB website & APFCB YouTube channel.

First Webinar: Biomarkers across the Spectrum of Glycemia in Metabolic Syndrome

The inaugural webinar, held on **11thOctober 2024**, was a significant milestone for the programme. The theme, **"Biomarkers across the Spectrum of Glycemia in Metabolic Syndrome,"** provided a comprehensive exploration of this critical area of metabolic health.

The webinar featured two eminent speakers:

1. **Dr. Deepak Parchwani** (India) delivered an insightful presentation on **"Cellular and Molecular Biomarkers of Metabolic Syndrome"**, discussing the mechanistic underpinnings and diagnostic relevance of biomarkers.
2. **Dr. Hassan Bayat** (Iran) presented on **"HbA1c Standardization, Analytical Performance, and Recent Takes from the Diagnostic Approach,"** offering a deep dive into the analytical and clinical aspects of HbA1c measurement.

The session was skillfully moderated by **Dr. Samuel Vasikaran** (Australia), Vice President APFCB who ensured a seamless flow of discussions and a productive Q&A segment.

The webinar garnered **over 700 participants** from 40 countries across six continents, reflecting the programme's widespread appeal and impact.

Second Webinar: Protecting Health in Asia-Pacific: Laboratory Advances and Lead Exposure Prevention

Building on the success of the first webinar, the second event was conducted on **16thDecember 2024**, addressing the pressing theme of **"Protecting Health in Asia-Pacific: Laboratory Advances and Lead Exposure Prevention."** This webinar highlighted advancements in laboratory diagnosis and strategies for mitigating lead exposure in vulnerable populations.

The featured speakers were:

1. **Dr. Vivek Pant** (Nepal), who presented on **"Optimizing Laboratory Diagnosis of Lead Poisoning: From Detection to Monitoring,"** sharing practical insights and diagnostic advancements.
2. **Dr. Hafsa Majid** (Pakistan), who covered **"Lead Poisoning in Vulnerable Populations: Assessing Risks and Implementing Prevention Strategies,"** emphasizing public health approaches and preventive measures.

The webinar was moderated by **Dr. Praveen Sharma** (India), Secretary APFCB whose expertise ensured engaging discussions and effective participant interaction.

APFCB Auspices Events Calendar, Activities 2024

Report by:

Dr. Woei-horng Fang

APFCB Committee of Congresses and Conferences Chair

APFCB auspices 2024

One of the functions of the APFCB C-CC is the award of auspices of the APFCB for various scientific events like conferences, congresses, and events organized by regional society members and corporate members. The provision of auspices is mutually beneficial: the APFCB lends its prestige to a meeting which should help it attract greater participation and in return the APFCB benefits from greater name recognition among the participating laboratory scientists. All applications for APFCB auspices are evaluated by the C-CC and treated on a case-by-case basis in an efficient and timely manner. The C-CC is careful to award auspices only to scientific meetings that are organized by learned bodies and vendors such as APFCB corporate members where the content is of scientific and educational value. In 2024, the committee members evaluated and granted APFCB auspices to the following scientific events.

	Conferences and Events:	Dates	City and Country	Organizer
1	The 15th International & 21st National Congress on Quality Improvement in Clinical Laboratories	30 APR -3 MAY, 2024	Tehran-Iran	Iranian Association of Clinical Laboratory Doctors (IACLD)
2	International Symposium on Laboratory Medicine	25 FEB, 2024	Shenzhen, China	Snibe Co., Ltd.
3	APAC-IRIDS	19-20 JUN, 2023	HCM City, Vietnam	Roche Diagnostics Asia Pacific Pte Ltd
4	International Symposium on Laboratory Medicine	10 MAR, 2024	Shenzhen, China	Snibe Co., Ltd.
5	International Symposium on Laboratory Medicine	14 APR, 2024	Kathmandu, Nepal	Snibe Co., Ltd.
6	International Symposium on Immunoassay	27 APR, 2024	Tbilisi, Georgia	Snibe Co., Ltd.

7	APFCB-ACBI Webinar on "Point of Care Testing (POCT)"	30 APR, 2024	Online; Zoom platform	Clinical Biochemists of India (ACBI)
8	Annual Academic Sessions CCPSL 2024	11-13 JUL, 2024	Colombo, Sri Lanka	College of Chemical Pathologists of Sri Lanka
9	APFCB Travelling lecture: Patient-based Quality Control Lecture and Workshop	12 OCT, 2024	Taipei, Taiwan	Chinese Association for Clinical Biochemistry (CACB)
10	Roche Experience Days 2024	22-23 NOV, 2024	Chengdu, China with virtual broadcast	Roche Diagnostics Asia Pacific Pte Lt
11	50th Annual Conference of the Association of Clinical Biochemists of India (ACBICON) 2024	4-7 DEC, 2024	Chandigarh, INDIA	Association of Clinical Biochemists of India (ACBI)
12	AMBICON 2024	19-21 DEC, 2024	Ahmedabad, INDIA	Association of Medical Biochemists of India
13	Vietnam Chemical Pathology Course XV 2024	28 NOV, 2024	Webinar	Roche Vietnam Co., Ltd.

The committee also worked on updating the Congresses and Conferences webpage of APFCB to include the details of the major scientific events, which have been granted APFCB auspices. APFCB EB encourages all the Member associations to apply for APFCB auspices for their annual meeting.

The enigma surrounding coffee-colored serum

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Abstract

Abnormal discoloration of body fluids like serum or urine has been reported in the literature as a pharmacological adverse effect. Herein we report a patient with coffee-colored serum as an adverse effect of eltrombopag. Therefore, we alert the laboratory professionals and highlight the importance of visual inspection of the serum sample in a clinical laboratory and explore the possibilities. Furthermore, eltrombopag at high dose (200mg) can interfere with bilirubin assay based on the methodology used in the detection systems.

Keywords: Bilirubin, Brown serum, Coffee colored serum, Eltrombopag, Interference

Introduction

Visual inspection of the serum sample can give valuable information regarding the underlying condition of the patient. The most commonly observed visual discoloration of serum after centrifugation of the sample are red, icteric or milky appearance. (1) These have the potential to interfere with the biochemical assays and may lead to erroneous interpretation. However, modern automated analyzers are able to quantify hemolysis, icterus and lipemia (HIL) interference more accurately than the traditional visual inspection of the sample, thereby improving the quality and efficiency of the laboratory analysis. (2,3) Nevertheless, the visual inspection of the serum sample still provides some clues when there is unusual serum discoloration. (4) Herein we report a patient with coffee colored serum as an adverse effect of eltrombopag. Therefore, we alert the laboratory professionals and highlight the importance of visual inspection of the serum sample in a clinical laboratory and explore the possibilities. Furthermore, eltrombopag at high dose (200mg) can interfere with bilirubin assay based on the methodology used in the detection systems.

Case Report

We report a case of 15-year-old female who was presented with complaints of cough for one month.She had consulted at a higher centre where bronchoalveolar lavage was done and the aspirate showedgrowth of Pseudomonas colonies on culture sensitivity testing. She was admitted in our hospital for intravenousantibiotics. History was notable for allogenic peripheral stem cell transplant done 9 years back for beta thalassemia major, complicated by graft versus host disease and recurrent pulmonary infection. She was transfusion dependent as there was persistent anemia and thrombocytopenia. The patient was under erythropoietin as well as eltrombopag 100mg since February 2024, which has been increased to 200mg since past 2 months. Her blood sample was received in our laboratory for a complete blood count and biochemical tests. After centrifugation

of the sample, the serum showed an unusual color of coffee brown(Figure 1). On analyzing the sample further with VITROS 5600 analyzer, the HIL index was <15, 5 and <20 respectively (Package insert limit of HIL: <15, <2, <20 respectively). The biochemical test results are shown in table 1. According to the literature, the possible causes of the brownish color serum could be related to methemoglobin, metalbumin, hemolysis or myoglobin. We discussed the abnormal serum color with the clinician and ruled out methemoglobinemia clinically as oximetry was maintained at 95% and there was no cyanosis, dizziness or SOB. Furthermore, we added LDH, which was normal and helped in excluding hemolysis. Additionally, CK was normal, which ruled out rhabdomyolysis. Urinalysis was within the normal limit with negative hemoglobin or myoglobin. After excluding all possibilities, we started exploring if any medication could lead to coffee-colored serum. We noted a very handful of cases reported in the literature with brown serum in patients under eltrombopag therapy. Therefore, we concluded that the coffee-colored serum in our patient was due to eltrombopag after ruling out other possibilities. Furthermore, we noted drug interference with bilirubin as the total bilirubin of the patient'spre and post increment of the dose of eltrombopag was 0.4mg/dl and 2mg/dl respectively.

Biochemical test	Results	Reference value
Total bilirubin	2	0.2-1.3mg/dl
Indirect bilirubin	1.4	0.2-1mg/dl
Direct bilirubin	0.6	0-0.3mg/dl
AST	29	14-36U/L
ALT	35	<50U/L
ALP	98	38-126U/L
GGT	26	12-43U/L
LDH	172	120-246U/L
CK	<20	55-170U/L
Sodium	140	137-145mmol/L
Potassium	3.7	3.5-5.1mmol/L

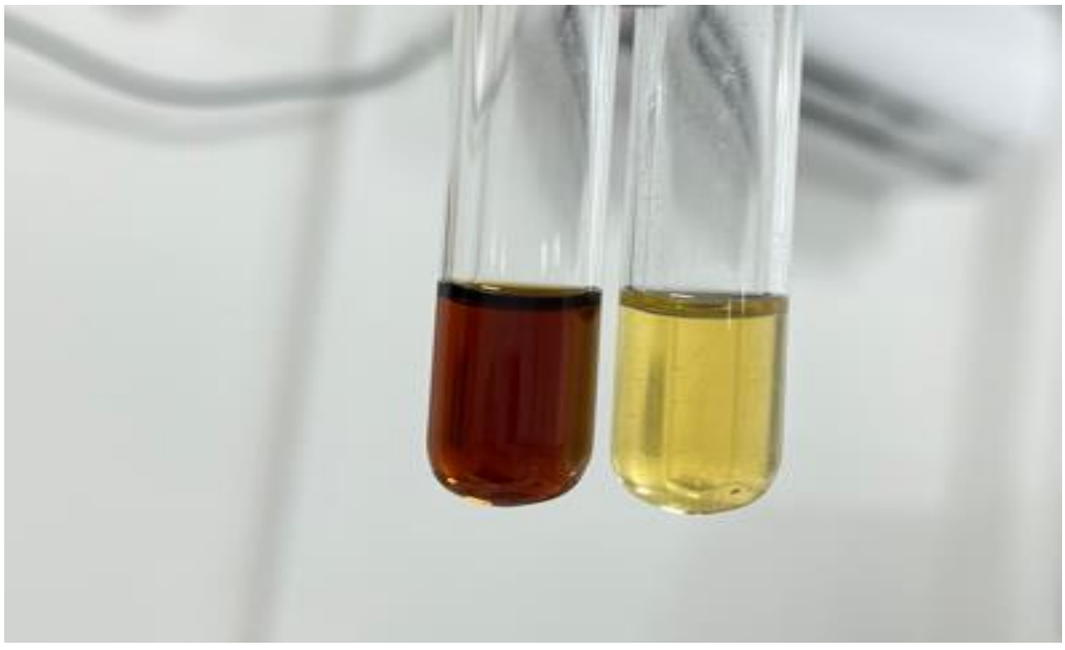

Figure 1: Patient's coffee coloured serum (left) and normal control serum (right).

Discussion

Brownish discoloration of serum may be caused due to methemoglobin, hemolysis, methalbuminemia or Myoglobin. (1) Methemoglobinemia occurs when iron in hemoglobin is oxidized from ferrous state to ferric state, compromising the release of oxygen to tissues. It can be genetic or acquired when the patient is exposed to certain drugs like dapsone, local anesthetics, nitrates, quinones or some chemicals like chlorates. (5) Methemoglobinemia can be excluded by arterial blood gas analysis and co-oximetry. (6) Laboratory findings in in-vivo hemolysis include low haptoglobin, indirect hyperbilirubinemia and elevated LDH.[4]Serum estimation of myoglobin or CK should be performed to rule out rhabdomyolysis in proper clinical context.[5]

Some drugs are very notorious for abnormal discoloration of body fluids like urine or serum. Another rare cause of brownish colored serum is due to adverse drug effects of eltrombopag. Eltrombopag is an oral thrombopoietin receptor agonist approved for the treatment of immune thrombocytopenia, severe aplastic anemia and thrombocytopenia associated with Hepatitis C infection. (3,4,7) It is a brownish to yellowish powder which exhibits pH dependent change in color. (8,9) The patients with high dose of the drug (150mg per day) are found to have adverse drug reaction like abnormal serum coloration or skin hyperpigmentation. (3,4,8,10) Cardamone et al. have reported the interference of high dose eltrombopag or its metabolites with certain analytes like bilirubin in spectrophotometric assays. (7) Additionally, eltrombopag is a hepatotoxic drug and can cause challenges in assessment of hyperbilirubinemia based on the methodology used. (3,4,9) Therefore, it is imperative to distinguish between true hyperbilirubinemia and drug induced pseudohyperbilirubinemia for accurate interpretation of the results. (7) This can be achieved by comparing the pretreatment and posttreatment bilirubin in absence of clinical feature of hepatotoxicity or normal liver enzymes. In our case, the increment in bilirubin could possibly be attributed to drug interference at high doses. Similarly, Fuentes et al. reported that a high dose of eltrombopag can positively interfere with bilirubin on the VITROS 5600 automated detection system. (3) The possible analytical interference of this drug should be recognized by the lab professionals as they are methodology dependentand this information should be shared with the clinicians.

Conclusion

Visual inspection of plasma is crucial in laboratories as abnormal colored plasma requires special attention. Though eltrombopag is not a commonly encountered drug in clinical practice, its adverse pharmacologic effect should be kept in mind by laboratory professionals. Additionally, comparing pre and post treatment bilirubin in patients under eltrombopag can help in monitoring hepatobiliary function to ensure accurate interpretation of the results.

Patient consent for publication: obtained
conflict of interest: none

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Quiz section!!

Question 1

Based on the following arterial blood gas values, which condition is most likely?
pH 7.32，Na^+ 142 mmol/L，Cl^- 106 mmol/L，HCO_3^- 24 mmol/L

1. Uremia
2. Lactic acidosis
3. Renal tubular acidosis
4. Primary aldosteronism
5. Diabetic ketoacidosis

Question 2

Given the following laboratory results, which of the following conditions is most likely?

pH 7.32, $PaCO_2$ 27 Torr, HCO_3^- 13 mmol/L
Na^+ 138 mmol/L, K^+ 4.5 mmol/L, Cl^- 102 mmol/L

1. Heart failure
2. Interstitial pneumonia
3. Renal tubular acidosis
4. Primary aldosteronism
5. Diabetic ketoacidosis

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Committee member of APFCB Communication & Publications Committee

Answer section!!

Answer for question 1

3. Renal tubular acidosis

Let's analyze the blood gas results:

- **pH 7.32:** This is slightly below the normal range (7.35-7.45), indicating a mild acidosis.
- **Anion gap:** Calculating the anion gap: $[Na^+] - ([Cl^-] + [HCO_3^-]) = 142 - (106 + 24) = 12$ mmol/L. This is within the normal range (12±4 mmol/L).

Why renal tubular acidosis is the most likely diagnosis:

- **Normal anion gap acidosis:** The normal anion gap indicates that the acidosis is not caused by an accumulation of unmeasured anions (like in lactic acidosis or diabetic ketoacidosis).

Renal tubular acidosis: This is characterized by a defect in the kidney's ability to excrete hydrogen ions, leading to metabolic acidosis without a significant increase in the anion gap.

Why other options are less likely:

- **Uremia:** While uremia can cause metabolic acidosis, it is typically associated with an elevated anion gap due to the accumulation of uremic acids.
- **Lactic acidosis:** This condition is characterized by an elevated lactic acid level and an increased anion gap.
- **Primary aldosteronism:** This condition primarily affects potassium levels and blood pressure, and it doesn't usually cause acidosis.
- **Diabetic ketoacidosis:** This is a common cause of anion gap metabolic acidosis due to the production of ketone bodies.

In conclusion, the normal anion gap and the presence of acidosis point towards renal tubular acidosis as the most likely diagnosis. However, a definitive diagnosis requires further evaluation, including a comprehensive medical history, physical examination, and additional laboratory tests.

Answer for question 2

5. Diabetic ketoacidosis

Let's break down the laboratory results:

pH 7.32: This is lower than the normal range (7.35-7.45), indicating acidosis.

$PaCO_2$ 27 Torr: Lower than normal (35-45 Torr), suggesting a compensatory respiratory alkalosis in response to the metabolic acidosis. Ketone bodies stimulate the respiratory center, leading to hyperventilation and increased CO_2 excretion.

HCO_3^- 13 mmol/L: Significantly lower than normal (22-28 mmol/L), indicating metabolic acidosis.

Anion gap: $Na^+ - (Cl^- + HCO_3^-) = 138 - (102 + 13) = 23$ mmol/L. This is significantly higher than the normal range (12±4 mmol/L), strongly suggesting an anion gap metabolic acidosis.The elevated anion gap is due to the accumulation of unmeasured anions, such as ketone bodies.

(Hyperglycemia): While the glucose level is not explicitly provided in this problem, given the elevated anion gap and metabolic acidosis, diabetic ketoacidosis is the most likely diagnosis. This condition is often accompanied by hyperglycemia, as the body is unable to use glucose for energy due to insulin deficiency.

Why diabetic ketoacidosis is the most likely diagnosis:

Elevated anion gap and metabolic acidosis: The combination of a high anion gap and metabolic acidosis is highly suggestive of diabetic ketoacidosis. Ketone bodies, which are produced in excess during diabetic ketoacidosis, are unmeasured anions and contribute significantly to the increased anion gap.

Kussmaul respirations: Diabetic ketoacidosis is often characterized by Kussmaul respirations, a deep and rapid breathing pattern that is a compensatory mechanism to reduce the acidity of the blood by blowing off carbon dioxide.

Comparison with other options:

Heart failure: While heart failure can sometimes cause metabolic acidosis, it typically results in a normal or slightly elevated anion gap.
Interstitial pneumonia: This condition usually presents with respiratory acidosis due to impaired gas exchange, not metabolic acidosis.
Renal tubular acidosis: **As stated above, this condition causes metabolic acidosis with a normal anion gap.**

Primary aldosteronism: This condition is associated with hypertension and hypokalemia, but not acidosis.

In conclusion, the laboratory findings are most consistent with a diagnosis of diabetic ketoacidosis. However, a definitive diagnosis requires further evaluation, including blood glucose, urine ketones, and blood ketone levels.

"Squirrels enjoying Hawthorn Berries"

Contributed Dr. Tan It Koon
Founding and Past President APFCB

A beautiful autumn scene features frolicking squirrels enjoying the ripe hawthorn berries. Their bodies dangle on fragile branches, with bushy tails curled in glee as they nibble on the bright red fruit. Sunlight filters through golden foliage, casting a warm glow on their soft fur. Amber and russet-colored leaves dance in the crisp breeze, creating movement. The deep crimson of the berries and earthy tones of the forest enhance the richness of the painting. The scene is full of joy, depicting the seasonal abundance of nature and the lively spirit of the squirrels.