Current Challenges and Needs of Clinical Laboratories in the Asia–Pacific Region: A Cross-Country Assessment

Article:
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Guest: Dr. Qing Meng is the Chair of ADLM Global Affairs Core Committee Asia-Pacific Subcommittee and is professor and section chief of Clinical Chemistry and Special Chemistry Laboratories in the Department of Laboratory Medicine at The University of Texas MD Anderson Cancer Center.

Randye Kaye: Hello, and welcome to this edition of *JALM* Talk from T*he Journal of Applied Laboratory Medicine*, a publication of the Association for Diagnostics & Laboratory Medicine. I'm your host, Randye Kaye.

The Association for Diagnostics & Laboratory Medicine (ADLM), Global Lab Quality Initiative (GLQI) aims to develop and implement programs that promote education and training in laboratory medicine for low or middle-income countries and regions worldwide.

For 10 years, the Asia-Pacific Working Group (APWG) has supported the ADLM GLQI by enhancing laboratory medicine education and training in developing countries and has delivered programs in 10 countries across the Asia-Pacific region. To better understand the regional landscape and country-specific needs, the APWG conducted a comprehensive needs assessment through an APWG survey and virtual interviews. The purpose of this assessment was to determine the programming required to support laboratorians and provide developmental assistance to communities in the region, aligning with ADLM's strategic plan.

The July 2026 issue of *JALM* features a special report that presents the findings of this needs assessment. Today, we're joined by the special report's corresponding author, Dr. Qing Meng. Dr. Meng is the chair of ADLM Global Affairs Core Committee Asia-Pacific Subcommittee. He is professor and section chief of Clinical Chemistry and Special Chemistry Laboratories in the Department of Laboratory Medicine at the University of Texas MD Anderson Cancer Center. Welcome, Dr. Meng.

Qing Meng: Thank you for having me.

Randye Kaye: What motivated the Asia-Pacific Working Group to conduct this needs assessment?

Qing Meng: The motivation really came from our experience working with the laboratory professionals across the Asia-Pacific region through ADLM's Global Lab Quality Initiatives. Since 2016, the Asia-Pacific Working Group has been involved in educational programs in multiple countries within the region. These programs were very well received but also realized that region is extremely diverse.

The need of a large urban academic laboratory in China or India may be very different from those in Nepal, Sri Lanka, Bangladesh, or a rural island region in the Philippines. So, we felt we needed a more systematic understanding of the actual challenges laboratorians face in their daily work. We wanted to ask, what are the biggest barriers to laboratory quality? And what educational topics are most needed? What infrastructure limitations exist? How do these laboratory challenges often affect their community they serve? The goal was to make sure future programs are truly aligned with the regional needs rather than assuming one model will work everywhere.

Randye Kaye: All right, thank you. Can you tell me how was the assessment conducted and what kinds of laboratory professionals participated?

Qing Meng: Yes, we used a mixed approach that combined both survey data with the interviews. The survey was distributed to ADLM members, customers, and partner societies in several targeted countries including Sri Lanka, China, Nepal, Bangladesh, India, Kazakhstan, and the Philippines. We received responses from 114 laboratorians representing a range of professional roles. These include clinical chemists, medical technologists, laboratory directors, chemical pathologists, technical supervisor, consultants, administrator, pathologists, and also including IVD specialists.

In addition to the survey, we conduct interviews with the laboratory professionals from several countries. These interviews were very important because the survey gave us quantitative information but the interviews help us understand the lived experience behind the numbers. For example, a survey might tell us that training is limited but an interview can explain why, whether it is because of a cost, lack of internet access, staffing shortage, or the inability to leave the bench for continual education.

The interview also helped us cross-check the survey findings and identify themes that were shared across countries as well as challenges that were more country-specific.

Randye Kaye: All right, thank you. So a survey and interviews. What were the most important findings?

Qing Meng: The most consistent findings were that the access to continual education and training is one of the biggest challenges for laboratorians in the Asia-Pacific region. This came through very clearly in the survey. In fact, access to continual education was the most frequently identified challenges.

We also saw important differences by setting. For example, suburban laboratories responded to much higher training needs as well as a staffing shortage and funding limitation. Another key finding was the ongoing need for strengthening quality management including quality control, external quality assurance, proficient testing, accreditation, standardization, and harmonization of test results. These are fundamental issue for laboratory medicine.

Infrastructure was also a major issue. Things like lack of equipment, limited automation, unreliable internet connectivity, and the difficulty transporting samples, especially in rural or geographically isolated areas.

Staffing was another important issue. Some laboratory faced shortage, burnout, difficulty retaining trained personnel, and even brain drain where trained laboratory professional leave for opportunity abroad.

And finally, we found that laboratory challenges are closely connected to community health challenges. In many areas, patients may have limited health knowledge, delayed access to testing, or difficulty affording private laboratory service or treatment.

So laboratory quality is not just a technical issue, it is directly connected to public health and health equity.

Randye Kaye: All right, thank you. I see all those findings. Another thing that the paper emphasizes is that the Asia-Pacific region is kind of difficult to categorize simply as urban, suburban, or rural. Now, why is that important?

Qing Meng: Yes, this is a very important point. In many needs assessment, we often classify setting as urban, suburban, or rural based largely on population size. But in the Asia-Pacific region, this classification can be misleading. Some areas classified as urban still have limited access to lab infrastructure or specialized testing while some smaller regions may actually be better connected through regional networks.

In our paper, we noted that even areas classified as urban in Asia-Pacific may not have the same level of laboratory access that one might expect in a major U.S. or European city. Some specialized tests may still need to be sent to external or even

international laboratories. Therefore, we cannot design training programs simply based on broad categories like urban or rural. We need to consider infrastructures, geography, transportation, technology access, and local resources. A more thoughtful approach will help make education and support much more effective.

Randye Kaye: So based on this assessment, what should ADLM, APWG, and other organizations do next?

Qing Meng: The main message is that educational programming should be targeted, practical, affordable, and tailored to local needs.

First, there's a strong need for training in laboratory quality management. This should include internal quality control, external quality assurance, proficiency testing, accreditation, pre-analytical variables, standardization, and test harmonization.

Second, educational delivery should be flexible. Both virtual and in-person education are equally important for improving access and hands-on learning.

Third, programs should fit for purpose and align with the local disease priority like diabetes, cardiovascular disease, and infectious disease. Laboratory education is most useful when it is connected to the clinical reality of the community.

Fourth, laboratorians can also help improve public awareness and encourage timely testing through health fair, community organization, and partnership with local healthcare providers.

Finally, we need a sustained partnership. A one-time educational event can be useful but long-term partnerships and collaboration are essential among professional societies, local laboratory leaders, government agency, academic institutions, and international organizations. These are areas where international organizations such as ADLM can provide substantial value.

Randye Kaye: All right, that's a lot of great recommendations. Final question, what's the main takeaway that you hope readers will remember from the article?

Qing Meng: The main takeaway is that the Asia-Pacific region has enormous diversity but also a shared commitment to improving laboratory quality. Laboratory professionals across the region are facing real challenges, limited resources, training gaps, staffing shortage, infrastructure barrier, and quality management needs but they are also highly motivated to improve patient care.

Our assessment provides a starting point. It helps identify where support is most needed and how the organizations like ADLM and APWG can design educational programs that are practical, locally relevant, and sustainable. If I had to summarize the message in one sentence, I would say strengthening laboratory education and quality management in the Asia-Pacific region is not only a laboratory priority, but also a public health priority.

Randye Kaye: Thank you so much for joining us today.

Qing Meng: Thank you.

Randye Kaye: That was Dr. Qing Meng discussing the *JALM* special report, Current Challenges and Needs of Clinical Laboratories in the Asia–Pacific Region: A Cross-Country Assessment. Thanks for tuning in to this episode of *JALM* Talk. See you next time and don't forget to submit something for us to talk about.