

EDITORIAL

Endoscopic ultrasound training in Asia: Taking a step further in the right direction

Endoscopy training has progressed rapidly over the years: traditional apprenticeship models have evolved and are still constantly changing to improve training quality for the betterment of clinical services. The importance of technology, innovative learning, and the need to constantly stimulate interest plays a pivotal role in challenging obstacles and discovering new limits in the field of endoscopy. For a comprehensive and complete endoscopy training process, training centers must possess several ideal requisites for this to be achieved. These include, (i) training based in an accredited and recognized training center; (ii) having a structured curriculum; (iii) dedicated trainers and faculties; (iv) competent based assessments and technical evaluation benchmarks; and (v) credentialing and certification.¹ In addition to that, endoscopic trainers need to be effective teachers in their fields, not only should they be technically proficient, but also possess good interpersonal and motivational skills to inspire trainees during their training development.²

Endoscopic ultrasound (EUS) training is no different. Since its introduction to the field of endoscopy in the early 1980s, EUS has become an integral part of clinical practice in the field of gastrointestinal (GI) endoscopy, providing an immense contribution to the diagnosis and management of a wide range of GI diseases. These commonly include pancreaticobiliary diseases, GI tract subepithelial lesions, mediastinal diseases, and liver diseases.³ With the continuous advances and innovative developments in the technology of equipment, EUS has enabled clinicians to visualize targeted organs with precision and clarity thereby improving diagnostic performance of these diseases. Furthermore, the increasing involvement of interventional EUS has pushed through boundaries that were previously unimaginable providing a wide range of therapeutic breakthroughs. Therefore, it is important that training programs offer a curriculum that implements essential benchmarks for quality training and the ability to objectively measure specific quality metrics in evaluating competence in performing EUS. This is to facilitate the transition from an apprenticeship-based model into competency-based training curricula.⁴ The American Society of Gastrointestinal Endoscopy (ASGE) guidelines states that a minimum of 225 procedures are needed to achieve competence while the European Society of Gastrointestinal Endoscopy (ESGE) states that 300 procedures were needed instead.^{5,6}

In the current issue of *JGH Open*, CS Koo et al. presented an insightful and comprehensive review on the current landscape and changing perspectives in the training of EUS in Asia. This review offers an in-depth description of the initiatives that could help navigate through various challenges and adaptively provide a solid framework for prospective EUS trainees in Asia. As training methods and experiences continue to mature over time, the route to acquire mastery and competency in EUS today has gone

beyond just attaining a required minimum number of procedures performed or duration to be considered complete. Hence, to supplement this, the need to construct a holistic blueprint for training is very much warranted. By realizing this pitfall, it provides a leading point for the expansion of innovative and effective training ideas to reach out to as many trainees as possible. As such, it is a breath of fresh air and renewed hope on how these challenges were being addressed and what the Asian EUS Group (AEG) has offered for EUS trainees across Asia to deal with these shortcomings. The authors first recognized the ongoing disparity between the limited number of formal fellowship training centers to the increasing number of trainees pursuing training in EUS. To complicate matters, rigorous and strict medical practice licensing requirements from various countries hampers the availability of proper hands-on fellowship training programs, for example, in Japan hands-on training is often not allowed by foreign trainees.⁷ And so, the call for wider options of training methods was necessary to overcome this shortfall. The various methods highlighted in the article include transitioning from didactic learning to virtual learning, intensive structured short-term training programs, virtual learning platforms such as live endoscopy session broadcasts and web meetings, as well as the use of simulators. In addition, the provision of the train-the-trainers' program further cultivates trainers to deliver teachings in a more structured manner. With that, it is evident that such initiatives have delivered a much-needed boost to the EUS training fraternity in Asia.

Discussion on endoscopy training in the current climate would not be complete without mentioning the impact of the current coronavirus [COVID-19] pandemic that has been ravaging the world since early 2020. It is obvious that the pandemic has resulted in a significant derailment in the progress of endoscopy training. Major guidelines have recommended the deferment of nonessential cases, limitation of endoscopic staffing, and trainee involvement to minimize the risk of COVID-19 transmission.^{8,9} This has inevitably led to a vast reduction in the number of endoscopic cases, potentially prolonging the training period with high rates of anxiety and burnout among trainees.¹⁰ Training opportunities and progress are also halted when many of these trainees are being deployed to manage the ever-increasing number of COVID-19 cases in their practice. Consequently, many trainees may not be able to reach the required procedural numbers to achieve competence, hence the need for such holistic and innovative training methods to strengthen the training outcome without compromising its quality. Simulation-based mastery learning (SBML) with virtual coaching seems promising in enhancing learning capabilities among trainees, especially in the COVID-19 era where travel restrictions and minimal face-to-face interactions


are widely enforced. This method integrates competency-based education with simulators while receiving teaching, evaluation, and feedback by experienced trainers via online communication.¹¹

Competency-based outcomes and training via objective-based developmental milestones should supersede the need to just fulfill a minimum procedure number to be credentialed as competent. Learning curves based on procedural numbers are notoriously variable and yet some may not achieve competence even when these requirements are met.¹² The authors acknowledge the need for such transition and hence more robust criteria are needed to accurately teach and evaluate trainees based on competency milestones. Validated, task-specific, skills assessment tools as mentioned such as The EUS and ERCP Skills Assessment Tool (TEESAT) recommended by the ASGE entails both technical and cognitive competency milestones to better ensure that trainees can perform these procedures in a systematic and consistent manner. Despite recognizing this, universal adoption and standardization of such practices are still lacking among training institutes. A multicenter prospective study, which looked at capturing the learning curves of EUS and endoscopic retrograde cholangiopancreatography (ERCP) using these validated assessment tools, showed that the majority of EUS trainees were able to achieve these milestones and at the same time, demonstrates the feasibility of integrating these data into a centralized data collection system.¹³ This would imperatively provide further feedback for areas of improvement, which is essential in future education development. Without a doubt, these adaptive training models by AEG have been advantageous, but the response of trainees to these assessment tools is yet to be seen.

So how do we translate such initiatives into a sustainable roadmap with accredited recognition. As the authors admit, these training methods were by no means replaceable to standard hands-on fellowship programs. Admittedly, recognized EUS trainers were lacking in the past but today, societies such as the AEG comprising leaders of the fraternity have at least 66 members with the capabilities and infrastructure at their disposal to improve training experiences among trainees and taking them to greater heights.¹⁴ The number of competent EUS endoscopists can only grow from here and many have benefited from the programs offered by the AEG, therefore, efforts to continuously expand the number of training facilities and faculties within each locality should not be overlooked nor neglected. Accredited centers of excellence in EUS training around Asia, which are endorsed by the societies should collaborate to establish a centralized recruitment platform, a standardized fellowship training curriculum, which incorporates innovative training models such as these, and a universally accepted credentialing process. This would not only facilitate qualified trainees all around Asia to have equal access to an accredited training program but also ensure that their competence and training will be widely recognized. Collaborative efforts should also encompass the cooperation between government agencies and medical licensing boards to enable hands-on practice in foreign countries whenever possible. At present, enrollment in EUS training programs rely on individual applications to willing training centers. Looking to the ASGE as an example, the Advanced Endoscopy Fellowship Matching Program provides a streamline matching platform for prospective trainees embarking on advanced endoscopy training to train in various accredited institutions on the offer of which

over 60 institutions have participated, though foreign trainees are not eligible.¹⁵ Another factor to consider is that training in any shape or form requires a considerable amount of financial support and with this reason, funding aid such as scholarship programs and the involvement of industry-sponsored fellowships may alleviate this burden especially for trainees from low-income developing nations.

To conclude, solid training foundations are the core fundamentals in consistently nurturing aspiring EUS trainees to be competent and safe endoscopists. The various training models introduced by the AEG have contributed immensely to the training of EUS in Asia and have undeniably made an influential impact on trainees to better overcome learning curves in performing this procedure. It is this unwavering commitment to constantly develop this field that takes EUS training in Asia a step further in the right direction.

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References

- 1 Adler DG, Bakis G, Coyle WJ *et al.* Principles of training in GI endoscopy. *Gastrointest. Endosc.* 2012; **75**: 231–5.
- 2 Keswani RN, Sethi A, Repici A, Messmann H, Chiu PW. How to maximize trainee education during the coronavirus disease-2019 pandemic: perspectives from around the world. *Gastroenterology.* 2020; **159**: 26–9.
- 3 DiMagna EP, DiMagna MJ. Endoscopic ultrasonography: from the origins to routine EUS. *Dig. Dis. Sci.* 2016; **61**: 342–53.
- 4 Patel SG, Keswani R, Elta G *et al.* Status of competency-based medical education in endoscopy training: a nationwide survey of US ACGME-accredited gastroenterology training programs. *Am J Gastroenterol.* 2015; **110**: 956–62.
- 5 Johnson G, Webster G, Boškoski I *et al.* Curriculum for ERCP and endoscopic ultrasound training in Europe: European Society of Gastrointestinal Endoscopy (ESGE) position statement. *Endoscopy.* 2021; **53**: 1071–87.
- 6 Faulx AL, Lightdale JR, Acosta RD *et al.* Guidelines for privileging, credentialing, and proctoring to perform GI endoscopy. *Gastrointest. Endosc.* 2017; **85**: 273–81.

- 7 Fujita R, Nagahama M, Yamamoto Y *et al.* Contributions from Japan to gastrointestinal endoscopy training and development: special report. *Dig. Endosc.* 2020; **32**: 699–705.
- 8 Chiu PWY, Ng SC, Inoue H *et al.* Practice of endoscopy during COVID-19 pandemic: position statements of the Asian Pacific Society for Digestive Endoscopy (APSDE-COVID statements). *Gut.* 2020; **69**: 991–6.
- 9 Soetikno R, Teoh AYW, Kaltenbach T *et al.* Considerations in performing endoscopy during the COVID-19 pandemic. *Gastrointest. Endosc.* 2020; **92**: 176–83.
- 10 Pawlak KM, Kral J, Khan R *et al.* Impact of COVID-19 on endoscopy trainees: an international survey. *Gastrointest. Endosc.* 2020; **92**: 925–35.
- 11 Soetikno R, Cabral-Prodigalidad PA, Kaltenbach T *et al.* Simulation-based mastery learning with virtual coaching: experience in training standardized upper endoscopy to novice endoscopists. *Gastroenterology.* 2020; **159**: 1632–6.
- 12 Shahidi N, Ou G, Lam E, Enns R, Telford J. When trainees reach competency in performing endoscopic ultrasound: a systematic review. *Endosc. Int Open.* 2017; **05**: E239–43.
- 13 Wani S, Keswani R, Hall M *et al.* A prospective multicenter study evaluating learning curves and competence in endoscopic ultrasound and endoscopic retrograde cholangiopancreatography among advanced endoscopy trainees: the rapid assessment of trainee endoscopy skills study. *Clin. Gastroenterol. Hepatol.* 2017; **15**: 1758–1767.e11.
- 14 The Asian EUS Group. Cited 2021. Available from URL: <https://www.asianeus.org/about-us/our-members/>.
- 15 A.S.G.E. *Advanced Endoscopy Fellowship Matching Program.* 2021. Cited 29 August 2021. Available from URL: <https://www.asgematch.com/Home/MatchInfo>.