Perspective

The Accreditation in Endoscopy Society of Pakistan: The Case for Training Standards

Mahnoor Umar[1], Laibah Arshad Khan[2], Shaherbano Rai[3], Athar Saeed[4]

[1-2-3]Fourth Year MBBS Student, King Edward Medical University, Lahore; [4]Queen Elizabeth Hospital, Gateshead, UK

Abstract

As the need for quality assurance in the provision of endoscopy services was felt increasingly across the globe, various training assessment and accreditations bodies such as the Joint Advisory Group (JAG) in the United Kingdom were established. JAG introduced JAG Endoscopic Training System (JETS), an e-portfolio and accredited endoscopy courses. Its remit also included standardization and accreditation of endoscopy facilities. Together, these measures redefined the landscape of endoscopy training and practice standards in the UK and beyond.

In Pakistan, post-graduate trainees learn to perform endoscopy during their fellowship in gastroenterology, where an "apprentice-mentor" method is used with no agreed national standard for evaluation. This review article used databases, published literature, endoscopic guidelines and a large number of research journals to find out the latest evidence for evolution in endoscopic training procedures and emphasises the need of developing a national agency for endoscopy training, certification and accreditation in Pakistan.

The comparison of different training techniques suggests that the incorporation of simulation based training in the early phases of endoscopic training along with mandatory patient-based training is a good combination. The training should involve deliberate practice with gradual acquirement of needed skills, based on teaching, feedback and debriefing and contextual learning.

In view of the need for quality assurance, Pakistan should establish an inter-agency training and accreditation group. The group's aims would be to formulate a curriculum, give accreditation to mandatory courses, provide an e-portfolio for performance evaluation and establish a means of assessment and certification. The mandatory training courses should be standardised, should involve innovative learning techniques and be independent of clinical discipline of the trainee. Continuous professional development should be assured through appraisals, performance audits and development of a national endoscopy database.

Corresponding Author | Mahnoor Umar, Fourth Year MBBS Student, King Edward Medical University, Lahore
Email: noornawaz937@gmail.com
Key Words: Accreditation, national agency, endoscopy, basic skills, gastroenterology, joint advisory group, training units, curriculum, quality assurance.

Introduction

Endoscopy is defined as the procedure in which a fine optic instrument is used to visualize internal structures of the body. It is a relatively less invasive procedure. The term 'endoscopy' is nowadays more commonly used for endoscopy of digestive tract. The common procedures in the endoscopy of gastrointestinal tract (GIT) are broadly categorized as upper GI Endoscopy, lower GI endoscopy, ERCP (Endoscopic Retrograde Cholangio Pancreatography)[1] and EUS (Endoscopic Ultrasound). Basic skills for endoscopy include knowing the theoretical basis of performing a safe procedure and safe and effective peri-endoscopy management. It is important to be fully aware of indications, conduct careful selection of patients for the procedure, look after the patient before, during and after the procedure and minimize risks with regards to sedation, cardiac abnormalities like arrhythmias and oxygen saturation etc.

Pre-procedure quality standards include a complete assessment of fitness and eligibility of the patient for the procedure should be made before a diagnostic endoscopy. The patient should be provided with a complete account of the type of procedure and possible associated risks before the endoscopy, a suitable appointment should be made based on indications of endoscopy and clinical features. A check list should contain patient demographics (name / hospital number / date of birth), allergies, any comorbidities, a record of the patient's comprehension of the procedure and a list of medication. A consent form should be completed.

Procedural quality standards comprise of a systematic, safe and comfortable examination with appropriate therapeutic intervention should be carried out. The quality metrics should include, in addition to the endoscopy technique, the pain and the sedation score, recorded by an independent observer. An account of the procedure and findings should be documented. An account of histological samples taken should also be documented and the samples should be labelled accurately. The type of sedation given should be recorded. The endoscopist should stick to safe sedation practice. A record of the images related to anatomical structures or any observed lesions should be made. The features of mucosal images should be described.

Post-procedure quality standards demand that any complications linked with the procedure itself or sedation should be described and appropriate action taken as required. A document consisting conclusions derived from endoscopy should be prepared and a copy offered to the patient. A check-list should be completed before the patient is allowed to leave. It should document the vital signs, the clinical condition, arrangements of post discharge care. Post discharge instructions should be provided, preferably in writing. Only an accredited endoscopist should be allowed to carry out the procedures independently.

To summarize, as in case of any surgical procedure carried out in a clinical setting, endoscopy also involves certain prerequisites that should be in place in order to complete a competent procedure. All pre-procedure requirements should be check-listed and the post-procedure documentation and management plans should be correctly noted down.

During the procedure, pace and progress, patient comfort, instruments handling and visualizations should be monitored. Endoscopic Non-Technical Skills (ENTS), such as communication and teamwork, situation awareness, leadership, judgment and decision making should be kept in mind for assurance of a good work environment. Given the protocols mentioned above, training skills, training system and quality assurance is felt not to be standardized and in need of improvement in Pakistan. There is a need for developing a national agency in Pakistan to lay down a framework of training standards in endoscopy, and a mandatory structured assessment and accreditation of endoscopists before they are able to practice independently.

Endoscopy Training in the UK

As the demand for endoscopy increases across the globe, with screening for colorectal cancer becoming available in several countries, various techniques to acquire optimal skills in endoscopy have been developed. This section will discuss these techniques, their advantages, disadvantages, limitations and efficacy while keeping in mind the importance of competency. Training in endoscopy is usually a component of gastroenterology specialist training. The goal of this training is to produce trainees who can perform endoscopy with competence, safety and ensure comfort of the patient. They should have adequate knowledge in interpreting diagnostic findings and to be competent in performing therapeutic procedures. Thresholds have been established at which a trainee's competence can be achieved, though it varies a lot between countries[3]. There is evidence that assessment of learning curves rather than threshold numbers is a better tool for performance evaluation.[4] Along with training of technical skills, courses on non-technical skills (sedation, patient comfort) have been emphasized to optimize endoscopy training and to produce competent endoscopists.[5]

Joint Advisory Group on Gastrointestinal Endoscopy (JAG)

The United Kingdom established JAG in 1994, a regulatory body to monitor quality assurance (QA) in endoscopy training. The role of JAG has developed to include not only standardization of training between trainees of different background disciplines, but also to ensure that the training done in the country is of the highest quality and is patient-centric. Formal

accreditation and certification is needed before an endoscopist can perform the procedure independently.[6] JAG's model for endoscopy training introduced JAG Endoscopic Training System (JETS), an e-portfolio, and accredited endoscopy courses. Together, they redefined the landscape for endoscopy training and gastroenterology education in the UK and beyond.

JAG Endoscopy Training System (JETS) Incorporating modern technology with traditional medical practices, JETS is a website that streamlines the JAG accreditation process by providing information on courses in endoscopy available for the trainees in training units, which must comply with the endoscopy standards set in the Global Rating Scale (GRS). An online portal e-portfolio is part of the JETS website. Initially created to cater for the needs of nurse training in endoscopy, the web based tool now provides comprehensive learning assessment for the entire endoscopy team. Keeping in mind that the way feedback is given by the trainer can largely impact trainee outcomes[7], JETS also emphasizes on providing education to the trainers to hone their teaching skills (train the trainer courses). The e-portfolio provides a log book for both trainees, to record learning milestones and trainers, who can not only enter formal assessment of the trainee but record their own training data as well. The programme provides a database which can allow the trainee to form a personalized learning plan, be able to provide evidence of competency when applying for JAG certification and helps the trainer focus on trainee-specific needs and provide anonymous feedback.[8] The e-portfolio records information under the headings of Key Performance Indicators (KPIs), Direct Observation of Procedural Skills (DOPS), Trainee Learning Objectives (TLOs) and Trainee Assessment of Trainer (TAT) and Training Lists.

Key Performance Indicators (KPIs) Endoscopy training includes some established criteria which are used as quantitative tools to assess performance in a standardized manner. As an example, for colonoscopy, it includes 'caecal intubation rate' under which, competency is defined as achieving ≥90% success rate.[9] Other KPIs are patient comfort scores, depth of sedation and rates of adenoma and polyp detection.

Direct Observation of Procedural Skills (DOPS) This is a more subjective approach to assess competency by following a structured method, relying on the apprentice-mentor model and trainer feedback and supervision. The levels of supervision are the basis of this assessment tool. Maximal supervision means that the supervisor takes majority of tasks/decisions and delivers constant verbal prompt. **'**Significant supervision' depicts that the trainee undertakes the task requiring frequent supervisor input and verbal prompts. 'Minimal supervision' is that the trainee undertakes the task, requiring occasional supervisor input and verbal prompts. **'**Competent for independent practice' shows that no supervision is required. As a trainee becomes competent, they move on from maximal supervision to independent practice.

Trainee Learning Objectives (TLOs) As trainees progress through DOPS, this tool prov-ides a free text interface to create learning objectives for themselves. It provides a format for self-assessment and making a personal development plan to allow the training to be customized to the needs of the trainee.

Trainee Assessment of Trainer (TAT) Not only does the trainer give feedback to the trainee but the trainee can also provide feedback to the endoscopy specialist by grading them through nine attributes. This encompasses the objective of JETS-establishing a dynamic learning experience through a two-way interaction between the trainer and the trainee.

Training Lists A 'dedicated training list' is designed to meet trainee needs and is specific to them, with case types and numbers adjusted to the experience level of the trainee. An 'ad-hoc training list' is more generalized and not specific to the trainee. A 'service list' is a list of procedures performed by a certified trainee who can practice independently. A summative assessment list contains cases which can be used for assessment.

Basic Skills in Colonoscopy (BSC) Course

The BSC is a rigorous 3-day course on colonoscopy which is designed to encompass all aspects of the training including hands-on experience with real patients under strict supervision, simulator training and teaching of non-technical skills through discussion groups and feedback. The course provides intensive one-on-one teaching to enhance individual learning and is overseen by the JAG for quality assurance. The course has shown to produce signif-

icant improvement in endoscopy skills as shown by improvement in performance indicator of colonic intubation (PICI) and Caecal Intubation Rate (CIR) with more marked improvement in trainees in earlier stages of their training, specifically those having performed <70 procedures prior to the course compared to those who performed 70 to 140 and those who performed >140.[10]

Hands-on Training Vs Simulation Based Training

One-on-one training is carried out under the supervision of a senior trainer. The trainee gradually moves from maximal to significant and then minimal supervision, after which she becomes competent for independent practice. It involves hands-on experience with patients and direct observation of procedural skills. This method allows trainees to observe experienced endoscopists and learn to deal with unique and difficult situations, as well as working on them first-hand. This setting allows for immediate feedback both in terms of procedural requirements and analytical skills, which improves the proficiency of the trainee.

Drawbacks of this setting include discomfort and risk on the part of the patient, and time constraints on the part of the instructors, because procedures involving trainees take longer. From the perspective of the trainee, the learning environment is more stressful, risk of the procedure adds to the pressure of learning a new skill, time-constraints do not allow unlimited question-and-answers and feedback from the instructor and in cases of complicated cases, the mentor may need to take over the procedure in the interest of the patient.[11] Uncontrolled and often unpredictable pathologies make the learning experience somewhat haphazard. Some peculiar abnormalities are rarely encountered and repetitive practice is usually not feasible, depending upon the clinical settings.

Simulation-based training involves endoscopy training through mechanical models, animal models, cadavers, ex-vivo, hybrid, (involving plastic and animal organs) and more recently, computerized virtual reality simulators. This controlled setting relieves stress on the trainees, as they can learn and proceed at their convenience and can make errors with no risk of harm to the patients. Trainers can also take advantage from the simulations by structuring trainings according to learner's needs. This setting also allows simulation of certain pathological findings which are rarely encountered in normal clinical settings. However, simulation based learning cannot completely replace hands-on training procedures because simulations are usually costly, involve no direct patient exposure and therefore do not prepare the trainee for actual clinical settings where findings maybe unusual or involve serious, life-threatening situations. In addition, some training that is based on simulation is self-regulated and uses no feedback or cross reviewing which decreases the proficiency of the training. Simulation-based training however, allows repetitive practice and innovative educational strategies.

The conclusion, therefore, is to incorporate simulation training in early phases along with mandatory patient-based training later. The training should involve meticulous practice with achieving learning targets, input, reviewing the output, context based learning, and innovative educational strategies.[12]

Training System in Pakistan

In Pakistan, there exist two post graduate training systems in gastroenterology, namely FCPS and MD. FCPS (Fellowship of the College of Physicians and Surgeons) is a specialty training course/diploma which is offered by The College of Physicians and Surgeons Pakistan (CPSP). According to the choice of the specialty, the timespan of the training varies from 4-5 years.[13] CPSP has standardized the FCPS examination into three parts:

FCPS-I: To appear in this exam, one must have MBBS or equal qualification and have completed one year of house job. The candidates then have the option to choose their specialty after passing the exam.

IMM (intermediate module): This exam is held after two years of training in the chosen specialty and is specific for that particular specialty. It consists of one theory exam and another image based exam.

FCPS-II This is the final examination held after 2-3 years of passing the IMM. Passing this exam, leads to the award of the FCPS diploma.

After passing the FCPS-II exam in gastroenterology, one can choose to have either basic or advanced training in endoscopy. There are hardly any advanced fellowships available in Pakistan. The post graduate

trainee learns to perform endoscopy in her postgraduate training years in gastroenterology. In the surgical training of gastroenterology as well, the conventional method used for training the surgeons is the 'apprentice-mentor' method. The trainee carefully watches and observes the procedures done by the trainer. The training initiates with carrying out simple procedures which then progresses to performing complex procedures. Major concerns arising from this type of training are safety risks for patients, limited stay of patient and time constraints.[14]

We suggest that on a national level, endoscopy standards and accreditation should be independent of specialty**.** Electronic log books should be maintained by both trainees and trainers**.** There should be mandatory training courses and formal assessment of endoscopy skills should be undertaken. An inter-agency group should be established, between the national and the provincial health departments, the College of Physicians and Surgeons, the universities providing endoscopy training, Pakistan Medical Commission and the Pakistan Society of Gastroenterology. We believe that the Pakistan Society of Gastroenterology should have a lead role in defining the remit of this group.

Pakistan Society of Gastroenterology and GI Endoscopy (PSG): This society, established 35 years ago, works to bring together specialists from national and international platforms to discuss, maintain, develop and extend training and knowledge in gastroenterology and GI endoscopy in the country. It organizes seminars, conferences; promotes research and publications and works to establish high ethical standards.[15]

College of Physicians and Surgeons Pakistan (CPSP): The College, established in 1962, administers and regulates post-graduate medical education and training in the country. It is also the body responsible for post-graduate examinations. Similar to the JETS in the UK, their website offers an electronic logbook for monitoring training.[16]

Federation of Universities: Universities acting as regulatory and examination bodies would be involved in the establishment of the group as well.

Government Health Departments: As the health sector in Pakistan involves both public and private entities, government health departments at provincial and federal levels would need to be involved. The newly established Pakistan Medical Commission may need to have an advisory or statutory role.

The inter-agency training and accreditation group should aim to achieve the following goals: The group should devise and disseminate a curriculum of training, there should be mandatory basic skills courses standardized by this group, a mechanism of accreditation should be devised, the group should issue a certificate of accreditation and should ensure the standards established are comparable to world standards.

Role of Trainees, Trainers and Training Units

It is desirable that all trainees register with this group. All trainees would then be required to maintain an electronic log book. All trainees are to apply for accreditation according to the agreed standards and through the published mechanism, established by this regulatory group. It would be mandatory for the trainees to attend the basic skills courses authorized by the group.

All trainers should be registered with this national inter-agency training and accreditation group. The national endoscopy training program should devise 'training-the-trainers courses'. All measures that help trainers improve their teaching skills such as trainer's handbooks and trainer portfolio should be recommended. An endoscopy trainer needs to be proficient in any endoscopic procedure that she teaches to others; they should perform at least at the minimum level for competence outlined by the national accreditation authority / group.[17]

A national program to enhance the standards of the endoscopy units, in particular, those offering training in endoscopy, should be established. Following features of the endoscopy units should be inspected to assess the quality of procedures carried out in them: nature of the unit, (hospital, freestanding endoscopy clinic or office), most recent rating by the accreditation agency, number of different procedures, upper GI tract endoscopies, colonoscopies, ERCP, EUS conducted by the unit, number of rooms for procedure and bays for patients, total number of trained staff and their level of training, documented strategies and systems to sedate and monitor the patients,

decontaminate and cleanse the workspace and equipment, strategies to reduce risk, recall the patient for surveillance, track pathology results and quality improvement, safety data about infection rates, unplanned events and admissions and communications and feed-back about hospital staff and satisfaction of patient.[18]

Feedback is an important method of assessing the development of a trainee's skills. The trainer comments on the quality of the procedure conducted by the trainee. Feedback should be focused to identify and correct errors. Randomized trials have proved that trials which included feedback from expert endoscopist lead to better transfer of skills than self-regulated simulation based training with no feedback.[12] At the end of training, there should be an assessment, with criteria for provisional certification. In a clinical setting, there should be documentation of all endoscopic procedures in electronic logbooks.

Development of the Curriculum

There should be a database provided by the national accreditation agency including documents and videos to guide instructors in how to effectively train the trainees and a suggested threshold number of procedures that must be performed. Assessment and evaluation tools should be provided.[19] Simulation based training including animal and plastic models and digital simulations should be incorporated into early phases of traditional hands-on patient training.

Table 1: Aims & Objectives of AESOP

Aims and Objectives of AESOP	
1.	Devise and disseminate a curriculum of training
2.	Arrange mandatory basic skills courses
3.	Devise a mechanism of accreditation
4.	Issue a certificate of accreditation
5.	Ensure standards established are comparable to world standards

Conclusion

Endoscopy is widely used in Pakistan for both diagnostic and therapeutic applications. Hence, quality assurance of basic skills in endoscopy is the need of the hour. In the UK, there is a standardized body which oversees training, accreditation and quality assurance called the Joint Advisory Group on Gastrointestinal Endoscopy (JAG). Under its ambit comes the JAG Endoscopic Training System (JETS) and accreditation of the endoscopy courses and also, a mechanism to define and monitor the quality of the service standards in endoscopy units.

JETS is an online platform which provides an e-portfolio for trainees to record and track their learning process, incorporate feedback from both trainees and trainers and a means to apply for certification. The training courses combine various learning formats including hands-on training, discussion groups, simulator training and teaching of non-technical skills. Through JAG, the United Kingdom has become successful in ensuring that anyone performing an endoscopy in the country has the required skill set to ensure best outcomes for the patients.

In Pakistan, training in endoscopy is mainly through apprentice-mentor model during post-graduate education in gastroenterology, done in an individual capacity in teaching hospitals without any national body overseeing it. Seeing the need for quality assurance, Pakistan needs to establish an inter-agency training and accreditation group. The group's aims would be to formulate a curriculum, accredit mandatory courses, provide an e-portfolio for performance evaluation and establish a means of assessment and certification. It should also standardize the service and training standards of the individual units. By bringing together stakeholders and policymakers, this step can greatly improve the standard of endoscopy training and practice in Pakistan. We suggest that this group is called 'Accreditation-in-Endoscopy Society of Pakistan' or AESOP.

Salient Points

AESOP, The Accreditation in Endoscopy Society of Pakistan: the case for training standards

1. Quality Standards in Endoscopy
2. Endoscopic Training in UK
3. Endoscopic Training in Pakistan
4. Development of National Agency for quality control
5. Aims and Objectives of AESOP

References:

1. Digestive Diseases and Endoscopy [Internet]. Web MD. WebMD; 2004.[Cited 2021 March 21]. Avai-

lable from: https://www.webmd.com/digestive-disorders/digestive-diseases-endoscopy.
2. Beg S, Ragunath K, Wyman A, Banks M, Trudgill N, Pritchard DM, et al. Quality standards in upper gastrointestinal endoscopy: a position statement of the British Society of Gastroenterology (BSG) and Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland (AUGIS). Gut. 2017; 66(11):1886-1899.
3. Kim JS, Kim BW. Training in Endoscopy: Esophagogastroduodenoscopy. Clin Endosc. 2017; 50(4):318-321.
4. Ekkelenkamp VE, Koch AD, de Man RA, Kuipers EJ. Training and competence assessment in GI endoscopy: a systematic review. Gut. 2016;65(4) :607-615.
5. Matharoo M, Haycock A, Sevdalis N, Thomas-Gibson S. Endoscopic non-technical skills team training: the next step in quality assurance of endoscopy training. World journal of gastroenterology: WJG. 2014;20(46):17507.
6. Siau K, Green JT, Hawkes ND, Broughton R, Feeney M, Dunckley P, et al. Impact of the Joint Advisory Group on Gastrointestinal Endoscopy (JAG) on endoscopy services in the UK and beyond. Frontline Gastroenterol. 2019;10(2):93-106.
7. Dilly CK, Sewell JL. How to Give Feedback During Endoscopy Training. Gastroenterology. 2017;153(3) :632-636.
8. Mehta T, Dowler K, McKaig BC, Valori RM, Dunckley P. Development and roll out of the JETS e-portfolio: a web based electronic portfolio for endoscopists. Frontline Gastroenterol. 2011;2(1):35-42.
9. Ward ST, Mohammed MA, Walt R, Valori R, Ismail T, Dunckley P. An analysis of the learning curve to achieve competency at colonoscopy using the JETS database. Gut. 2014;63(11):1746-1754.
10. Siau K, Hodson J, Anderson JT, Valori R, Smith G, Hagan P, et al. Impact of a national basic skills in colonoscopy course on trainee performance: An interrupted time series analysis. World J Gastroenterol. 2020;26(23):3283-3292.
11. Khan R, Scaffidi MA, Grover SC, Gimpaya N, Walsh CM. Simulation in endoscopy: Practical educational strategies to improve learning. World J Gastrointest Endosc. 2019 Mar;11(3):209-218.
12. Siau K, Hawkes ND, Dunckley P. Training in Endoscopy. Curr Treat Options Gastroenterol. 2018;16(3) :345-361.
13. Cpsp ZAS-W. College of Physicians and Surgeons Pakistan [Internet]. Edu.pk. [cited 2021 May 5]. Available from: https://www.cpsp.edu.pk/fcps.php.
14. Zubair U, Zubair Z. Surgical resident training in Pakistan and benefits of simulation based training. J Pak Med Assoc. 2020;70(5):904-908.
15. About PSG [Internet]. Pakistan Society of Gastroenterology & G.I Endoscopy. [Cited 2021 March 25]. Available from: http://www.psg2020.com/aboutus.php.
16. About CPSP [Internet] College of Physicians and Surgeons Pakistan. [Cited 2021 March 25]. Available from: https://www.cpsp.edu.pk/about-cpsp.php.
17. Wells C. The characteristics of an excellent endoscopy trainer. Frontline Gastroenterol. 2010;1(1):13-18.
18. Cotton PB. Quality endoscopists and quality endoscopy units. J Interv Gastroenterol. 2011;1(2):83-87.
19. Zanchetti DJ, Schueler SA, Jacobson BC, Lowe RC. Effective teaching of endoscopy: a qualitative study of the perceptions of gastroenterology fellows and attending gastroenterologists. Gastroenterol Rep (Oxf). 2016;4(2):125-130.