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Acquiring and maintaining competency in gastrointestinal endoscopy

Catherine Dubé, MD, MSc (Epi), FRCPC, Associate Professor [a, b, *], Alaa Rostom, MD, MSc (Epi), FRCPC, Associate Professor [a, b]

[a] Department of Medicine, The Ottawa Hospital, Ottawa, Ontario, Canada
[b] Ottawa Hospital Research Institute, Ottawa, Ontario, Canada

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A B S T R A C T

In recent years, an important transformation has taken place in the field of gastrointestinal endoscopy training. Two important movements have helped initiate this transformation: patient centered quality and competency based training.

Patient centered quality in endoscopy became an important focus for colorectal cancer screening programs, as it was acknowledged that colonoscopy services played a central role in the outcomes of screening. This prompted the need to close the quality loop through the development of innovative endoscopist training and upskilling programs. As well, the importance of leadership skills and leadership training was highlighted as a key factor in effective quality improvement.

Competency-based training depends on well-defined goals of training and on the regular documentation and review of the learner's progress. This is facilitated by objective assessment and performance enhancing feedback, enabled by measurement tools that can provide a quantitative or qualitative assessment and identify areas in need of further development. Simulators and scope imagers can aid the acquisition of technical skills, particularly in the novice phase.

These important advances in our evolving concepts around endoscopy training have also raised many questions, highlighting important knowledge gaps which, we hope, will be addressed in coming years.

* Corresponding author. University of Ottawa, Division of Gastroenterology, The Ottawa Hospital Civic Campus, Room A194, 1053 Carling ave, Ottawa, Ontario, K1Y 4E9, Canada. Tel.: +1 613 798 5555x10215; fax: +1 613 761 5487.
E-mail address: cdube@toh.ca (C. Dubé).

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Since its introduction, endoscopy has had a transformational effect on the practice of gastroenterology and gastrointestinal surgery. Endoscopy opened a window of diagnostic possibilities that continues to expand to this day, influencing the way we manage symptomatic patients and screen for disease. Endoscopy is also allowing an increasingly more complex array of therapeutic interventions that have blurred the dividing line between medicine and what historically was considered surgery. These rapid advancements, however, have also exposed deficiencies in the historical models of endoscopy training, maintenance of competence and the assurance of quality. In many cases, standard models of endoscopy training have failed to keep up with the training requirements of modern endoscopy. However, in recent years, a heightened emphasis on quality allowed endoscopy training to become an important aspect of endoscopy service delivery, one which we are trying to further conceptualize, support with evidence and which will undoubtedly continue to evolve and expand.

The purpose of this article is to summarize the current and future state of endoscopy training as covered in this dedicated issue of *Best Practice & Research Clinical Gastroenterology*.

Historically, training in endoscopy was achieved through a typical apprenticeship model, as employed in many areas of medicine and surgery. This is often described as the "see one, do one, teach one" model that is common in many areas of medicine. In this model, trainees would first observe a procedure, then try their hand at it, and, eventually, acquire a variable degree of proficiency over the course of a training period that often varied in length based on specialty and jurisdiction, amongst other factors. It was thought that the makings of a "good endoscopist" resulted from a combination of innate attributes and experience developed through practice and volume. The endoscopy training curricula were often poorly developed, and relied on a time and volume based system of apprenticeship with graded responsibility that would eventually see trainees practice experientially on patients, often with little direct input from trainers (Fig. 1a). Typically, objective setting and in-training evaluation of progress were lacking or at best informal. Technically competent trainers typically could not articulate the relationship between scope handling and feel in order to problem-solve trainee difficulty with scope advancement and the progress of the procedure. The result was that trainers would often take over the scope at times of trainee difficulty. After "sufficient" exposure, the amount of which would vary from one trainee to the other, trainees would be able to finally integrate the skills that would allow them to become technically proficient to complete the majority of procedures independently.

However, in recent years, an important transformation has taken place in the field of gastrointestinal endoscopy training. Two important movements have helped initiate this transformation: patient centered quality and competency based training.

Patient centered quality in endoscopy

Impact of colorectal cancer screening programs

Patient centered quality in endoscopy became an important focus for colorectal cancer (CRC) screening programs which, at the time, were being implemented or piloted in various countries around the world. It was acknowledged that, in order for CRC screening programs to deliver high quality, safe and efficient screening, they would have to ensure that high quality and patient centered colonoscopy services were in place. This is because screening for CRC yields compelling but finite benefits, yet can potentially result in unlimited harms in the setting of poor quality colonoscopy.

Ultimately, CRC screening programs sensitized the field to the importance of patient safety, quality, and social accountability and led to the development of standards and auditable metrics for colonoscopy quality monitoring [1]. Quality and safety indicators were defined [2], validated [3] and monitored [4], to form the basis of endoscopy quality improvement and quality assurance programs [5]. Performance indicators were defined for use at the individual endoscopist level, the facility level and the regional or national level [6]. One important consequence of the data collection associated with this transformative, quality focused movement was the recognition that an important proportion of practicing endoscopists performed at suboptimal levels for important quality metrics, prompting the need to close the quality loop through the development of innovative endoscopist training and upskilling programs.