A JOINT STATEMENT FROM SAGES AND THE ABS ADVOCATING FLS CERTIFICATION BY THE END OF THE PGY-2 RESIDENCY YEAR

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Joint Statement:
The General Surgery Board of the American Board of Surgery (ABS) and Society of American Gastrointestinal and Endoscopic Surgeon (SAGES) recommend "Fundamental of Laparoscopic Surgery" FLS certification by end of the PGY-2 year. This has meaningful advantage to the trainee in terms of participation in operative cases and potentially greater autonomy before completion of training. This recommendation falls short of a mandate but would call attention to this important evidence-supported educational opportunity. FLS should not be viewed as a mastery assessment, but rather as skills and knowledge acquisition in preparation for safe participation in laparoscopic procedures.

BACKGROUND

The American Board of Surgery (ABS) serves patients, society, and the specialty of surgery by providing leadership in surgical education and practice. One of the ways in which the ABS serves patients is through the process of Board certification in Surgery. Currently, the ABS requires successful completion of the "Fundamental of Laparoscopic Surgery" (FLS) examination in order to be considered for General Surgery Board Certification. The FLS exam includes assessments of technical and knowledge-based competencies for safe performance of minimally invasive surgery. FLS certification is a recognized standard and validated benchmark for demonstration of foundational competence in laparoscopic surgery. The American Board of Surgery's current requirement for FLS certification as a prerequisite for the ABS qualifying exam does not specify the training level at which this certification should occur. Studies, primarily focused on junior learners, have provided strong evidence supporting the value of FLS certification as a key preparatory step for laparoscopic surgery (1-3). FLS task performance, when practiced during objectives-based training in the fourth year of medical school, has been shown to enhance skills development and performance that continues to benefit first year residents (4). Given the intent of the FLS program and the evidence of performance gains with FLS certification, FLS should have a defined temporal position in training where it would be most meaningful as a performance milestone and to potentially enhance patient safety. Competence achieved with FLS in a simulated environment translates directly to improved clinical performance. Establishing this structure presents an important opportunity for improvement and underscores the larger importance of simulation as a tool to facilitate progression to clinical competence.

Recently the ABS has implemented a new assessment tool known as Entrustable Professional Activities (EPAs). EPAs leverage microassments at individual patient encounters to gauge trainee progression to practice–readiness. This determination is made on the basis of entrustability decisions entered by EPA evaluators, with the highest level specifically signifying "practice ready". Those EPAs pertinent to laparoscopic procedures are complementary with FLS and can help to effectively gauge resident progress at very specific time points in training

that are expected to culminate in a determination of “practice ready” prior to the conclusion of training.

Data collected by the SAGES Fundamentals team shows that the majority of FLS test takers are more senior residents with combined PGY-4 and -5 percentages exceeding the percentages for PGY-1, -2 and -3 residents combined for 2019-24, with the exception of the 2022-23 academic year. This is despite clear evidence that the number of laparoscopic cases performed with junior resident participation has increased significantly over the past decade based on both national case log data and individual institution experience (5,6) (Figure 1), and that procedure times are lengthened with junior resident participation (7-9). A system that does not achieve FLS certification early in training, whether by design or not, amounts to a missed opportunity to gain skills and knowledge that will 1) contribute to entrustment decisions pertinent to laparoscopic surgery, and 2) delay the achievement of practice-readiness in laparoscopic surgery needed at the senior and graduate levels. In addition, pursuing FLS certification later in training may feel like backtracking for technically proficient senior or chief residents.

PROBLEM STATEMENT

Although the starting point for participation in laparoscopic cases for US residents may not be uniform, the mainstream nature of laparoscopic surgery and the contribution of laparoscopically performed cases to the ACGME Defined Categories report make meaningful participation in the operator role early in training very desirable, if not critical, to achievement of clinical competence. Furthermore, the ability to perform in the operator role in more demanding cases, or to have a solid basis of laparoscopic skills when starting robotic surgery experience requires development of these skills as early as possible in training. Although there are alternatives to FLS for lab-based laparoscopic practice, FLS is currently the uniform standard to assure benchmarkable entry-level laparoscopic skills and knowledge for US trainees. More recent work accomplished by Schmiederer et al (10), and Higgins, et al (11) have shown that significant educational benefit can be demonstrated when FLS certification occurs at junior levels of training. The former study surveyed self-efficacy in the performance of common laparoscopic operations for surgical trainees at all levels who took the 2020 ABSITE. Of all PG levels, PGY-1 residents who indicated that they had certified in FLS showed the most significant increase in self-efficacy scores compared to those who had not been certified. The latter study involved residents at all levels 2015-2021 who were evaluated using the SIMPL app (now SIMPL OR), with evaluations for laparoscopic cholecystectomy and laparoscopic appendectomy within 3 months before and after FLS certification. Significant improvement in “Supervision” scores was observed for PGY-2s and for “Performance” scores for PGY-4s. Although this effect for PGY-4s is important, the observed benefit at the PGY-2 level underscores the potential for early development at the start of what is expected to be a range of more numerous and advanced clinical opportunities. This will ideally lead to earlier practice-readiness and potential for mastery during training.

With the rise of robotic-assisted abdominopelvic surgery in General, Urologic, and Gynecologic specialties, the continued importance of laparoscopy as a surgical method has been questioned in the context of comparisons of the two technical methods for specific operations such as prostatectomy. Under a web posting of the question “Is Laparoscopy Dead in the Era of Robotic Surgery?” (12) the Residents and Fellows Committee of the American Urologic Association recently underscored the ongoing importance of laparoscopy for urologists. Some of this view is informed by equivocal evidence of clinical benefit compared to other approaches, system access challenges, or questions of financial sustainability of robot system use in some circumstances.

Viewing laparoscopic and robotic approaches as entirely different in nature is shortsighted. There is a skills transferability benefit from laparoscopy to robotic surgery as evaluated in simulation models (13), although it is not clear how necessary this ultimately is to achievement of competency at the robotic console. The most informed statements on this subject underscore the fact that without basic laparoscopic skills, there is not a safe pathway to start robotic surgery as it is currently performed (14). In addition, not all practice sites have access to robotic platforms and the core components of laparoscopy remain an essential skill for surgeons in practice. Basic access methods, initial scope and instrument operation, assistant maneuvers, and “bailout” skills in the event of technical problems with or access to a robotic system, all require facility in basic laparoscopic techniques. Lack of these skills in robotic cases may have implications just as dire as skills deficits in traditional laparoscopy. At the present time it is difficult to envision any change in the need to train general surgery residents to perform laparoscopic surgery with the goal of safe independent practice at the conclusion of training, whether or not growth of robotic surgery experience continues during residency.

SOLUTION

Now that we have entered the era of competency-based surgical training modeled on entrustable professional activities with frequent formative microassessments (EPAs), we are moving closer to the goal of universally achieving “practice ready” levels of performance at the conclusion of training. This effort requires that we provide training programs and residents with the right tools at the right time to maximize effectiveness of training. The expectation that residents will likely be participating in laparoscopic cases as PGY-2s, if not earlier, presents a compelling reason to encourage FLS certification early in surgical training. FLS certification by completion of the PGY-2 year would offer two complete academic years to study a compact body of readily accessible online education content and conduct objectives-based practice of established FLS skills tasks. This should put FLS certification well within reach of a US-trained surgical resident prior to the end of the PGY-2 year. The feasibility and effectiveness of both objectives-based practice of FLS tasks, and achievement of FLS certification by completion of the PGY-1 and -2 year has been demonstrated convincingly by educators at several institutions (6,15). Barriers that may be experienced by some programs could relate to accessing material resources for practice of FLS tasks, defining sufficient time for skills practice for junior residents,

or creating conflicts with established assignments of protected time for education. In addition, during the transition period with more than one class of trainees seeking certification in a single year, there may also be financial impact to this change. Some programs have had a staggered approach to earlier FLS certification and others are starting to leverage virtual platforms to combat these barriers. A move to uniformly transition trainees to a model of FLS certification prior to the end of the PGY-2 year cannot be anticipated to occur instantaneously. However, such a transition, which can utilize the option for remote testing, can reasonably be completed over a 3-year time frame, distributing cost and resource needs, and offering the opportunity to study EPA outcomes for trainees who certify early compared to those who do not.
FLS certification prior the end of the PGY-2 year is justified and desirable given the following factors: 1) pre-existing ACGME Core Program Requirements for objectives-based simulation training in residency, 2) demonstrated feasibility of FLS exposure during junior resident years, 3) educational benefit based on the timing of relevant junior residents' clinical experiences, 4) economic and potentially patient safety considerations with such junior resident involvement with laparoscopic cases.

CONCLUSION and FUTURE DIRECTIONS

The General Surgery Board of the ABS and SAGES recommend FLS certification by the end of the PGY-2 year. Assuming variable early adoption of this recommendation, there would be an opportunity to compare the outcomes of early versus delayed FLS certification using selected intraoperative EPA evaluation results for a range of important laparoscopic case types (i.e., cholecystectomy, appendectomy, inguinal hernia repair) most amenable to "practice-ready" entrustment decisions prior to the PGY-5 year. These data can be matched to date and PG level at FLS certification, which are items of information already collected by the FLS program.

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FIGURE LEGEND

Figure 1. Increase in PGY-1 and -2 Surgical Resident Participation in Laparoscopic Cases 2013-2017 at Washington University. “Recent Graduates” are those who finished training 2013-16. “Current Residents are those in the program 2017. Figure shows that the number of laparoscopic cases during the PGY-1 and -2 years almost doubled (6). *Reproduced with permission*

Figure 1.

Increase in Junior Surgical Resident Participation in Laparoscopic Cases 2013-2017[6]

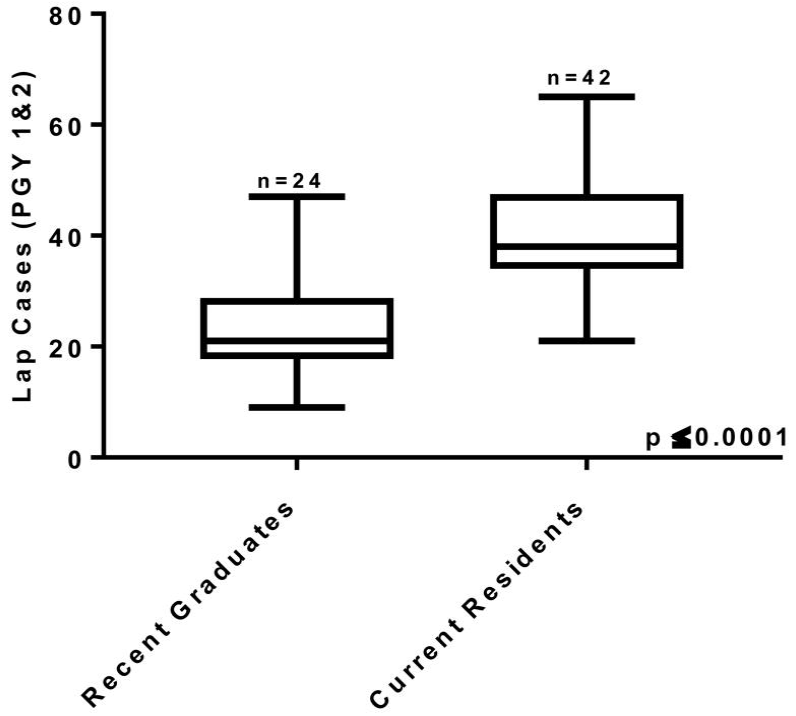

Table 1.
Postgraduate Year (PGY) of FLS Certification

	PGY1	PGY2	PGY3	PGY4	PGY5	Attending & Fellows
2019-2020	4%	13%	25%	26%	29%	2%
2020-2021	5%	17%	29%	21%	24%	2%
2021-2022	4%	14%	28%	23%	27%	2%
2022-2023	6%	18%	28%	23%	22%	2%
2023-2024	7%	17%	24%	22%	27%	1%