Intermittent surgeon career evaluation is needed from beginning to end

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Most of us who plan to attend the 2022 American Association for Thoracic Surgery Annual Meeting in person in Boston will board an airplane. Few of us will question the pilot's ability to get us safely there. Many surgeons are familiar with the parallels between what we do in the operating room and what pilots do in the cockpit and surgical teams have adopted several protocols developed by the airline industry.¹⁻³ Preoperative checklists, time-outs, as well as regular debriefing sessions are now considered standard practices. These safety checks notwithstanding, the single most important factor for successful surgery is the surgeon him- or herself. How comfortable would we be if we learned that the pilots flying us to Boston were reevaluated based on successfully passing some written tests or simply providing evidence that several conference sessions had been attended without any reevaluation of actual flying skills?

In Canada, a basic pilot's license allows an individual to fly a single-engine aircraft during daytime and fair-weather conditions. However, to advance to flying commercial airlines with passengers aboard, pilots must accumulate several thousand additional hours of simulation and actual flight experience.^{4,5} In some respects, a fully certified commercial pilot is not dissimilar to a fully certified surgeon. Even after being certified to fly commercial flights, a pilot must undergo regular reevaluation both in a simulator and while operating an actual aircraft under the scrutiny of a senior experienced pilot.

Many airline standards that exist today came about in response to the worst accident in airline history, which occurred in 1977 at Tenerife Airport in the Canary Islands. A KLM 747 taking off struck a Pan Am 747 that was taxiing down the same runway, killing 583 people.⁶ Extensive analysis of the black box recordings from that and other airline accidents concluded that accidents frequently occur

Senior surgeon assisting/observing surgical colleague with minimally invasive AVR.

CENTRAL MESSAGE

As in the airline industry, we need to ensure there are well-defined, fair processes in place for surgeon performance evaluation throughout our careers.

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because of miscommunication, failures in team leadership, poor coordination, and poor decision making as opposed to equipment failure or weather issues.⁷

The certification of surgeons in Canada follows a process similar to that in other Commonwealth countries: At the completion of an accredited residency program, we must pass our respective specialty examination set by the Royal College of Physicians and Surgeons of Canada (RCPS [C]), without which we cannot practice. This consists of a comprehensive written and an oral examination. Once certified by the RCPS(C), in the past, a specialist was able to practice throughout his or her lifetime without submitting to any formal reevaluation. In 2000, however, the RCPS(C), believing in the value of lifelong learning, introduced a program of continuous professional development. This involves the regular submission of credits for various learning activities ranging from attendance at continuing medical education-accredited conferences to self-learning projects, every 4 years.⁸ A practitioner must also renew his or her provincial license every year, an automatic process, as long as the specialist has conformed to the RCPS(C) guidelines for continuous professional development.

None of these reevaluation schemes involve direct assessment of a surgeon's technical and judgment skills,

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skills we all agree are central to successful and safe surgery. Typically, it is left to a division chief to confirm that a surgeon maintains his or her clinical competency and it is usually only in extreme cases of obvious deficiencies in competencies that a surgeon might have his or her privileges restricted or revoked. In the province of Ontario, age alone cannot be used to prevent a physician from practicing, although all physicians older than age 70 years are subjected to review. However, this review consists only of a chart audit.

As self-governing professionals, we should review our current processes for regular, ongoing evaluation of performance throughout a surgeon's career. I propose that such a process should consider the following approaches:

- A review of a surgeon's operative mortality, morbidity, and resource utilization.
- Peer review of outcomes. In our center, we share surgeon-specific outcomes, internally in a deanonymized fashion, based on the Society for Thoracic Surgeons database. This takes advantage of the strong effect that peer review has in improving outcomes. We have also augmented our mortality and morbidity reviews to follow the Australia and New Zealand Audit of Surgical Mortality, where surgeon mortalities are reviewed by internal peers who provide anonymous feedback with a focus on identifying whether or not a death was preventable.⁹
- An internal 360° review by peer surgeons and possibly nurses, anesthesiologists, and perfusionists.

Surgery is very much a team activity where members include anesthesiologists, nurses, perfusionists, fellows, and resident physicians, all of whom have numerous opportunities to observe individual surgeons in a variety of circumstances. In fact, hospital staff, including surgeons, will frequently seek out opinions from these individuals if they require a surgical procedure for themselves or for a family member. In our center, as in many other centers, the COVID-19 pandemic provided opportunities for staff surgeons to work with each other more than ever before, allowing for direct observations of a peer's performance (Figure 1). Why not utilize this opportunity to develop an anonymous 360° review process? Not only would such a team review provide valuable feedback to each surgeon, but it also would likely detect any early decline in a surgeon's performance, which may help mitigate serious consequences that might affect patient safety. To be successful, an entire surgical team must support this level of peer review and be willing to help each other in a constructive, nonpunitive manner. It may not be suitable for all programs or for all situations, and involuntarily imposing such an evaluation process runs the risk of it being used inappropriately with potentially negative consequences. Ideally, review activities should be overseen by a quality officer

FIGURE 1. A senior surgeon (C.M.F.) assisting and observing an attending surgeon colleague in the performance of a minimally invasive aortic valve operation.

who is a respected peer, preferably at arm's length from a division or department chief.

In Canada, we have not adopted public reporting of individual surgeon mortality rates as a means to evaluate surgeons in part because these metrics can be fraught with potential problems and can lead to unintended consequences.¹⁰⁻¹² Looking ahead, and again following the example of the airline industry, there is increasing recognition of the power of visual feedback (eg, simulation) and how this might be combined with artificial intelligence to provide useful, objective analysis of a surgical team's performance.¹³⁻¹⁶

We owe it to ourselves and to our patients to ensure that there are robust, well-defined processes in place for ongoing internal evaluation of surgeon performance throughout our careers. Applied appropriately, these will augment public trust in our profession.

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