

Preparing Canadian surgeons to provide care in the 21st century

Republished in *Can J Surg* 2012;55 (4 Suppl. 2):S141.

As a new crop of surgeons graduate from our training programs, a supplement to the August issue of *CJS* greets us with a series of provocative articles on topics of interest to residents and medical educators.¹⁻⁹ They probe contemporary challenges of delivering responsible surgical education in the pressure cooker of growing subspecialization, technological advances, economic restraint and changing demographics. These forces have molded new health knowledge and new roles for surgeons (and nonsurgeons) that radically change surgical care delivery. Education programs need to keep pace with this change.

In the past decade, Canadian universities have expanded undergraduate and postgraduate surgical training while shortening its duration. While it is encouraging that shorter undergraduate training was not associated with changes in physician achievement reviews for surgeons, the full impact of the changes is as yet unclear. The vast increase in health knowledge combined with expanded resources for surgical education might lead to expectations that surgeons have been better prepared. Yet recent general surgery graduates' self-reported procedural competence correlated weakly with their measured case volumes during training, even for essential common procedures. Moreover, many residents intend to pursue additional postgraduate training to master subspecialty expertise. Even when prepared for practice in remote communities, our graduates describe changes in their scope of practice that depend on whether subspecialty colleagues are available and whether they have access to support services (e.g., radiology). They aspire to the standard of care they have been taught, but paradoxically, their practices are restricted by the level of resources available.

We need to critically evaluate surgical training, scope of practice and relationships with other disciplines. Promising innovative strategies can calibrate training so that residents emerge with competence. Novel stimulation strategies, video analysis and feedback, and evidence-based tools to assess surgical procedural knowledge all deserve application. They will empower training programs to plan curricula, close training gaps, select rigorous training sites and identify trainees who are falling behind. However, these tools must be optimally balanced with bedside experience and reconciled with the current climate of restricted work hours, challenges to funding simulation centres, reduced tolerance for medical errors and diverging attitudes among generations of learners and their teachers.

What does all of this mean for surgical residents' stress? Time pressures and excess work continue to be major

stressors for trainees and their families. If surgical residents pursue additional training, they may be subject to increased personal debt and may enter practice at a time when governments are less able to fund operating rooms despite need. It appears that these distress parameters are more intense in private practice than academic settings, and young surgeons are particularly vulnerable. Future challenges of teaching programs will be to provide rigorous mentoring and career advice to support residents as they enter practice.

The Royal College of Physicians and Surgeons of Canada has recently acknowledged that surgical training must be fundamentally re-examined. They initiated a surgical summit taskforce on the future of the general surgeon in the 21st century. The aim is to collect data, sponsor a think-tank and report recommendations on general surgical training standards, accreditation and organization. This initiative and the efforts of surgical educators should be well informed by the series of articles in the *CJS* residency supplement.

Garth L. Warnock, MD

Coeditor, *Canadian Journal of Surgery*

Competing interests: None declared.

DOI: 10.1503/cjs.016312

References

1. Aminzadeh N, Farrokhyar F, Naeeni A, et al. Is Canadian surgical residency training stressful? *Can J Surg* 2012;55 (4 Suppl. 2):S145-51.
2. Trajkovski T, Veillette C, Backstein D, et al. Resident self-assessment of operative experience in primary total knee and total hip arthroplasty: Is it accurate? *Can J Surg* 2012;55 (4 Suppl. 2):S153-7.
3. Balayla J, Bergman S, Ghitulescu G, et al. Knowing the operative game plan: a novel tool for the assessment of surgical procedural knowledge. *Can J Surg* 2012;55 (4 Suppl. 2):S158-62.
4. Lockyer J, Violato C, Wright B, et al. Long-term outcomes for surgeons from 3- and 4-year medical school curricula. *Can J Surg* 2012;55 (4 Suppl. 2):S163-70.
5. Safavi A, Lai S, Butterworth S, et al. Does operative experience during residency correlate with reported competency of recent general surgery graduates? *Can J Surg* 2012;55 (4 Suppl. 2):S171-7.
6. Tso D, Langer M, Blair GK, et al. Sharps-handling practices among junior surgical residents: a video analysis. *Can J Surg* 2012;55 (4 Suppl. 2):S178-83.
7. Tomlinson C, LaBossière J, Rommens K, et al. The Canadian general surgery resident: defining current challenges for surgical leadership. *Can J Surg* 2012;55 (4 Suppl. 2):S184-90.
8. Matar WY, Trottier DC, Balaa F, et al. Surgical residency training and international volunteerism: a national survey of residents from 2 surgical specialties. *Can J Surg* 2012;55 (4 Suppl. 2):S191-9.
9. Brindley PG, Jones DB, Grantcharov T, et al. Canadian Association of University Surgeons' Annual Symposium. Surgical simulation: The solution to safe training or a promise unfulfilled? *Can J Surg* 2012;55 (4 Suppl. 2):S200-6.