Surgical Residency Training at a University-Based Academic Medical Center

Rebecca L. Hoffman, MD[a,*], Jon B. Morris, MD[b], Rachel R. Kelz, MD, MSCE[c]

KEYWORDS

- Surgical education • University-based • Graduate medical education
- Surgical workforce

KEY POINTS

- The tripartite mission of the university-based academic medical center defines their critical role in training surgical leaders and advancing surgery.
- The transition from an experiential model of education to an outcomes-based model has forced a critical paradigm shift in surgical education.
- The rich educational milieu of the university-based setting affords trainees a large variety of opportunities to excel in clinical care and surgical scholarship.
- An increased national focus on population and preventive health and on quality outcomes presents unique challenges to university-based departments, and by association, to the way in which residents are trained.

University-based surgical education stands at a crossroad in time. In the midst of the transition from an experiential model of education to one based on outcomes, the concepts of educational and clinical outcomes shape the way the modern generation is trained and yet, the concepts remain abstract from a practical perspective. The juxtaposition of achieving high value educational and clinical outcomes seems to be an impossible task. However, the university-based medical center, built on the principles of excellence in patient care, innovation and experimentation, and education offers

Disclosure Statement: Dr R.L. Hoffman is supported by a grant from the Measey Foundation (Grant #548018).

[a] Department of Surgery, Perelman School of Medicine at the University of Pennsylvania, 4 Maloney Building, 3400 Spruce Street, Philadelphia, PA 19104, USA; [b] General Surgery Residency Program, Department of Surgery, Perelman School of Medicine at the University of Pennsylvania, 4 Maloney Building, 3400 Spruce Street, Philadelphia, PA 19104, USA; [c] General Surgery Residency Program, Department of Surgery, Perelman School of Medicine at the University of Pennsylvania, 4 Silverstein Building 3400 Spruce Street, Philadelphia, PA 19104, USA
* Corresponding author.
E-mail address: Rebecca.hoffman@uphs.upenn.edu

Surg Clin N Am 96 (2016) 59–70
http://dx.doi.org/10.1016/j.suc.2015.09.004 **surgical.theclinics.com**
0039-6109/16/$ – see front matter

hope that the task can be achieved and will ultimately result in a better surgeon product than was previously possible.

University-based academic institutions have long operated with the primary mission of improving health via the three pillars of clinical service, research, and education. Although providing exemplary care to patients is a common goal of all medical centers regardless of affiliation, it is the university-based medical centers' contributions to the understanding of human disease through research, dedication to technological innovation, and the education of future leaders in health care that set them apart. Ironically, these very advances in health care delivery have introduced new challenges to graduate medical education (GME).

Historically, surgical education was tied exclusively to inpatient care, because this was the epicenter of the surgical experience. The reimbursement model for training surgeons was built on this premise. This year is celebrated the 50th anniversary of the date when President Johnson signed the Medicare Act that provided hospital compensation for the direct and indirect medical expenses incurred by physicians in training.[1] The antiquated way in which surgical trainees are paid highlights how far medical education has come and how far it still needs to go to meet the needs of the modern surgical trainee.[2] Today, the nature of surgical care has changed.[3] Surgical length of stay is a fraction of what it was and two-thirds of surgical procedures are provided in the outpatient setting.[4,5] As such, surgical education has extended beyond the hospital walls despite the tethering of GME reimbursement to the hospitals.

Public perception of surgical outcomes has changed and excessive work hours and experiential training that includes practice on patients is no longer acceptable. The necessity to train residents is somewhat at odds with the commitment to provide optimal patient care.[6] Therefore, duty-hour reform and the requirements for a simulation training system to allow the acquisition of skills before patient contact has been implemented to protect the public.[7,8] Furthermore, recognition of the importance of teamwork and communication have fostered a new structure for the safe delivery of surgical care. This necessitates an expansion of surgical skills beyond technical training to adequately prepare surgeons to practice in the new world order.

Amid these paradigm shifts in the delivery of care and concomitant changes to the training environment, there is enormous pressure on the surgical workforce to generate revenue for health systems, especially in the university setting.[9] The structure of the relationship between the hospital and the university can vary significantly and often influences the surgical training environment. Large taxes placed on physician practices can shift the focus from patient care, education, and research to high-volume productivity and lead to a malalignment of incentives. Ironically, high-volume surgical practices are the cornerstone of training. Despite an outcomes-based education system, surgical education will always be centered on experience.

The real challenge for university-based academic medical centers moving forward is staying true to their tripartite mission of clinical service, research, and education. The world is more complex and these centers have to redefine themselves to meet the demands of our time. It is against this incredibly dynamic backdrop, with the university mission in mind, that we that we turn to a more thorough discussion of the state of surgical education in the university-based academic program.

PREPARING RESIDENTS TO ENTER THE SURGICAL WORKFORCE

The purpose of surgical training is to prepare physicians to care for the surgical needs of the population. To do so requires exceptional technical training in addition to