# Workforce Needs and Demands in Surgery

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**KEYWORDS**

• Surgical training • Graduate medical education • General surgery
• Surgical workforce

**KEY POINTS**

- The rapidly evolving health care environment will place enormous pressure on the surgical training systems of today and thereby influence the surgical workforce of tomorrow.
- Despite the controversy about the workforce adequacy, it is highly probable that we will face a shortage of general surgeons or surgeons that perform general surgical procedures in the future.
- It is unlikely that the surgical workforce of the future can be augmented without significantly increasing the number of residency positions which seems improbable in the current environment.
- The surgical community needs to demonstrate strong leadership to develop innovative models of graduate medical education that will ensure an adequate surgical workforce for the future.

## INTRODUCTION

Around the turn of 19th century, William Stewart Halsted, (Fig. 1) the first surgeon-in-chief at The Johns Hopkins Hospital, was laying the foundation of what would become one of the most durable models of postgraduate training for physicians in the history of medical education. The existing systems of that time consisted of apprentice models of varying types with no consistency in length, structure, supervision, or assessment of competency prior to entering practice. Halsted's dissatisfaction with the existing systems, combined with the knowledge he acquired during his European travels, sowed the seeds for the Halstedian model. This model consisted of a structured training model over a finite period of time with supervision and progressive assumption of increasing responsibility until acquisition of competence prior to entering practice.

The attractiveness of this model and proven efficacy led to its approval by the American Medical Association House of Delegates in 1928 as the preferred model

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**Fig. 1.** Dr William Stewart Halsted.

for approving hospital-based residencies in specialties.[1] The resilience of this model is demonstrated by the fact that not only did it become the platform for surgical training, but for training in all specialties, and with some minor modifications, it is the predominant model for training postgraduate physicians worldwide.

The past 2 decades have brought forth more changes to the field of surgery than the entire previous century. This includes the introduction of minimally invasive techniques, adoption of duty hour rules and regulations, new regulations driven by elected officials and the public, demands for delivering value for the investments in graduate medical education, and changing sociocultural fabric with increasing population of greater linguistic diversity. Although the Halstedian model still holds value, surgical training models of the future need to demonstrate preternatural flexibility to adapt to the unending cycle of change and still produce surgeons of competence. This is extremely important, since good surgical training pathways of today contribute to pipelines that generate the surgical workforce of tomorrow.

An adequate surgical workforce is the core requirement to provide adequate surgical services to any nation. An ideal surgical workforce should consist of an adequate number of competent surgeons trained across all specialties that is distributed on a needs basis across the entire nation. Several concerns have been raised in recent times about the competence of trainees, adequacy of graduates, and the uneven distribution of surgical workforce across the nation. Concerns such as these about the workforce lead to question the validity of current surgical training paradigms and whether they are structured to meet the workforce needs of the future. Unless one addresses the issues burdening the surgical training systems of today, the problems associated with the surgical workforce of tomorrow will go unsolved.