

Post Graduate Surgical Training: Past, Present and Future in Pakistan

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Historically, the apprenticeship model remained the main standard of surgical training and education during the evolution of surgery from a trade into a profession. At that time, apprenticeship usually started around the age of 12 or 13 which lasted for five to seven years but this duration and the starting age of training could vary. The surgery was through direct observation followed by replicating actions of tutor, in wards and operation theaters. This training model was unstructured due to lack of guidelines or principles, regarding what knowledge and skills should be taught, who should be trained, when the training should start and for how long it should last. All this training use to focus around the mentor [1]. During the last quarter of 19th century and early 20th century, a marked change from mentor based training model to institution based and more formalized structured education took place [2]. This shift resulted in deepening the understanding of the educational and training process. As a result, major developments in training curriculum were made, which gradually became the base for surgical training in the 20th century [3]. Even with these developments, the training was still broad base and the surgeon was trained to deal with all sorts of surgical pathologies in all subspecialties including orthopedic, neurosurgery, urology, reconstructive surgery etc. This broad-based curriculum was intended to train doctors who entered general surgery practice without additional subspecialty training. The training comprised of detailed description of basic science subjects and opportunities for practical experience under supervision. This enabled the residents to locate the program best suited to their needs, place of work i.e. rural or urban and the institution where they intended to work. Today, many traditional attitudes and components of surgical training practiced in the past are followed. The basic concept that surgery training should be based on scientific knowledge, with gradual shift of patient care responsibilities and graded self-sufficiency in the operation theater during training period is still the main concept of residencies. The morbidity and mortality review meetings and the

teaching ward rounds, which were the cornerstone of surgical training since the inception of formal training programs, continue to be a fundamental constituent of training programs today. The existing landscape of surgical training also includes secluded education time for informative lectures and journal clubs to critically examine and evaluate clinical scenarios. Workshops on communication skills, surgical skills, research methodology along with feedback is also integrated into all training programs and is a vital component of assessing and improving resident skills [3, 4].

Similarly, in Pakistan, broad-based training over a defined period has been the hallmark of general surgery education in the beginning. The training opportunities expanded and started in a variety of settings including university, university-affiliated, military and community hospitals mainly in urban areas, each with varying capabilities, strengths, patient load and experience [4, 5]. Mostly, the postgraduate surgical training in Pakistan is based on supervised apprenticeship in designated institutes supervised by the College of Physicians and Surgeons of Pakistan (CPSP). Some medical colleges or institutes added an alternative postgraduate training programme of Master of Surgery (MS). Unfortunately, due to increasing number of private medical institutions without proper infrastructure and faculty, the standard of under/post graduate training has deteriorated in Pakistan, which in turn reflects the poor outcome of training [4, 6]. Since the last two decades, the proportion of graduates, especially female graduates, pursuing postgraduate education has increased tremendously in Pakistan [4]. From the year 2000 onward, the number of females entering medical schools has more than doubled and the number of women adopting surgery residencies has also increased significantly.

The CPSP has improved its training structure for postgraduate trainees, which includes a core basic education program leading to pathways and opportunities for further specialization and sub specialization. A number of new approaches, including early specialty programs, are being initiated and evaluated [5].

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The 21st century is bringing new challenges. Surgical education is expected to bring swift and vibrant changes in knowledge and understanding of surgical diseases, new technologies and procedures. With this rapid change, surgery residents are expected to learn more in restricted time. On the other hand, the increase in documentation, work hour limitations and other service-related duties may lead to less availability of time for learning or educational activities. Furthermore, more awareness and knowledge about diseases has resulted in increased demand for better accountability, patient safety and other ethical issues. This has led to greater scrutiny in training institutions and enhanced the requirements for error judgment in training programs [7, 8].

There is a dire need to alter surgery residency programs with more stress on education than service activities. A dynamic effort is needed to develop new advances to surgical training and appraisal strategies. In addition to the acquisition of basic skills, sufficient time must be given for learning higher and complex skills. In addition, training using simulators, inanimate skills stations, robots and animated models should be widely integrated in curriculum. Moreover, simulation should not only be used for training, but can also be used for the structured objective assessment of surgical skills with standard metrics. This will facilitate simulation to transform surgical education from subjective judgment to objective assessment of performance. National efforts will be needed jointly, to develop uniform, simulation-based surgical skills curriculum for future surgical trainees. Competence-based progression, rather than time served, should be the standard in upcoming surgical training. Novel instructive and training paradigms will be essential to steer the existing waters, to meet the challenges of the 21st century and to guarantee the production of trained, capable, proficient, and versatile surgeons.

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