From Time-Based to Competency-Based Standards: Core Transitional Competencies in Plastic Surgery

Kristina Lutz, MD,[*] Arjang Yazdani, MD,[†] and Douglas Ross, MD[‡]

[*]Division of Plastic and Reconstructive Surgery, Western University, St. Joseph's Health Care, London, Ontario, Canada; [†]LHSC – Victoria Hospital, London, Ontario, Canada; and [‡]Roth-McFarlane Hand and Upper Limb Centre, St. Joseph's Health Centre, London, Ontario, Canada

PURPOSE: Competency-based medical education is becoming increasingly prevalent and is likely to be mandated by the Royal College in the near future. The objective of this study was to define the core technical competencies that should be possessed by plastic surgery residents as they transition into their senior (presently postgraduate year 3) years of training.

METHODS: A list of potential core competencies was generated using a modified Delphi method that included the investigators and 6 experienced, academic plastic surgeons from across Canada and the United States. Generated items were divided into 7 domains: basic surgical skills, anesthesia, hand surgery, cutaneous surgery, esthetic surgery, breast surgery, and craniofacial surgery. Members of the Delphi group were asked to rank particular skills on a 4-point scale with anchored descriptors. Item reduction resulted in a survey consisting of 48 skills grouped into the aforementioned domains. This self-administered survey was distributed to all Canadian program directors ($n = 11$) via e-mail for validation and further item reduction.

RESULTS: The response rate was 100% (11/11). Using the average rankings of program directors, 26 "core" skills were identified. There was agreement of core skills across all domains except for breast surgery and esthetic surgery. Of them, 7 skills were determined to be above the level of a trainee at this stage; a further 15 skills were agreed to be important, but not core, competencies.

CONCLUSIONS: Overall, 26 competencies have been identified as "core" for plastic surgery residents to possess as they begin their senior, on-service years. The nature of these skills makes them suitable for teaching in a formal, simulated environment, which would ensure that all plastic surgery trainees are competent in these tasks as they transition to their senior years of residency. (J Surg 72:228-234. © 2014 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: plastic surgery, education, competency based

COMPETENCIES: Patient Care, Practice-Based Learning and Improvement, Systems-Based Practice

INTRODUCTION

The Royal College of Physicians and Surgeons of Canada and the Accreditation Council for Graduate Medical Education (ACGME) in the United States have both defined a need to change postgraduate education from a time-based standard to a competency-based standard.[1] A recent white paper from the Royal College of Physicians and Surgeons of Canada places a greater focus on explicit competencies as a way to organize residency education.[1] In this model, residents would progress through predefined competency-based milestones, instead of progressing through time-based rotations, to reach graduation. The competency-based training model would require all programs to define the physician abilities that are core to each specialty.

There are several themes in surgical education driving the core competencies model. The current time-based system does not embrace the idea that every learner is unique and progresses at differing rates. There is a need for trainees to take responsibility for their progress and development, and the curricula should allow for this. In an era of trainee duty hour restrictions, there is a need to de-emphasize time-based training and focus on the abilities actually acquired. There is a faulty assumption that over the course of the training period, important skills would be developed and exposure to all topics would be adequate.[2]

Correspondence: Inquiries to Douglas Ross, MD, MEd, FRCSC, The Hand and Upper Limb Centre, St. Joseph's Health Centre, 268 Grosvenor Street, Suite D0-210, London, Ontario, Canada N6A 4L6; fax: (519) 646-6049; E-mail: dross@uwo.ca, Douglas.Ross@sjhc.london.on.ca

  1931-7204/$30.00 http://dx.doi.org/10.1016/j.jsurg.2014.08.013

Public patient safety initiatives have less tolerance for trainees teaching themselves how to perform skills on "real" patients. To avoid this situation, teaching skills using surgical simulation is a safe and efficacious educational strategy. This field has blossomed over the past 5 years and, with changes in technology, has become an important adjunct for surgical educators teaching complex skills.[3]

Plastic surgery training in Canada consists of 5 years of surgical postgraduate education. In the present system, there is a clearly defined transition from a junior resident to a senior resident at the beginning of the third year of training (postgraduate year 3). As a senior resident, one may be expected to perform basic core skills independently. The objective of our study was to define the core technical competencies that junior residents should possess as they transition into their senior years of plastic surgery training.

MATERIALS AND METHODS

Survey Development

A list of potential procedures/technical skills that junior plastic surgery residents should be competent in as they transition into their senior years was created using a modified Delphi method. This broad list was formulated using the Objectives of Training of the Royal College Plastic Surgery Specialty Committee,[4] as well as expert experience. The Delphi group consisted of the investigators and 6 experienced, academic plastic surgeons from Canada and the United States.

Generated items were divided into 7 domains: basic surgical skills, anesthesia, hand surgery, cutaneous surgery, esthetic surgery, breast surgery, and craniofacial surgery. Members of the Delphi group subsequently were asked to rank particular skills on a 4-point scale with anchored descriptors (Table). This scale was adapted from a previous study by Bell et al.[2] that looked at which operative procedures residency program directors consider to be essential to the practice of general surgery. A large list of potential skills was generated; item reduction was facilitated by the senior author (D.R.). The initial round of item reduction was accomplished by having Canadian program directors rank the importance of each skill using standardized descriptors. Items were removed from the list if the majority of the group considered the skill to be "not expected to be in the skill set of a resident at this stage of training" or "not a core competency for plastic surgery." For example, raising a radial forearm flap, ulnar nerve transposition, and nipple reconstruction were removed based on the aforementioned criteria. The survey was then finalized, and the program directors were asked to rank each skill based on the 4-point scale with anchored descriptors (Table).

Survey Administration

This self-administered survey was distributed to all program directors of 5-year plastic surgery programs across Canada via e-mail ($n = 11$). Following the initial e-mail, a reminder e-mail was sent 2 weeks later to all invited participants. At 4 weeks following the initial e-mail, a final e-mail was sent to all nonresponders.

Research Ethics

This survey was endorsed by the Research Ethics Board at Western University (REB no. 103318).

Statistical Analysis

To summarize the data, descriptive statistical analyses were performed including measures of central tendency, frequency, and variability. Procedures were ranked as A, B, C, or D based on the mean response.

RESULTS

The Delphi group produced a survey with 48 potential skills. This survey was administered to all Canadian program directors ($n = 11$). All program directors invited to participate responded, giving a response rate of 100%. Overall, 26 core surgical skills were identified. Of them, 7 skills were determined to be above the level of a trainee at this stage; a further 15 were agreed to be important, but not core, competencies.

Basic Surgical Skills

All suturing techniques were deemed to be core competencies at this stage of training. Iliac crest bone graft harvest

TABLE. Likert Scale of Core Technical Skills

A	Procedure that junior plastic surgery residents should be competent to perform by the beginning of their senior years*
B	Procedure that junior plastic surgery residents should be familiar with by the beginning of their senior years* but not necessarily competent to perform independently
C	Procedure that is not expected to be in the skill set of junior plastic surgery residents by the beginning of their senior years*
D	Procedure that is not considered to be a core competency for plastic surgery

*For Canadian training programs, we define this time as the beginning of the resident's PGY-3 year.