Fostering and Assessing Professionalism and Communication Skills in Neurosurgical Education

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INTRODUCTION: Incorporation of the 6 ACGME core competencies into surgical training has proven a considerable challenge particularly for the two primarily behavioral competencies, professionalism and interpersonal and communication skills. We report on experience with two specific interventions to foster the teaching and continuous evaluation of these competencies for neurosurgery residents.

MATERIAL AND METHODS: In 2010, the Society of Neurological Surgeons (SNS) organized the first comprehensive Neurosurgery Boot Camp courses, held at six locations throughout the US and designed to assess and teach not only psychomotor skills but also components of all six Accreditation Council for Graduate Medical Education (ACGME) core competencies. These courses are comprised of various educational methodologies, including online material, faculty lectures, clinical scenario and group discussions, manual skills stations, and pre- and post-course assessments.

Resident progress in each of the 6 ACGME competencies is now tracked using the neurosurgical Milestones, developed by the ACGME in collaboration with the SNS. In addition, the Milestones drafting group for neurosurgery has formulated a milestone-compatible evaluation system to directly populate Milestone reports. These evaluations utilize formative, summative, and 360-degree evaluations that are considered by a faculty core competency committee in finalizing milestones levels for each resident.

RESULTS: Initial attendance at the 2010 Boot Camp course was 94% of the incoming resident class and in subsequent years, 100%. Pre- and post-course surveys demonstrated a significant and sustained increase in knowledge. The value of these courses has been recognized by the ACGME, which requires Boot Camp or equivalent participation prior to acting with indirect supervision during clinical activities. Neurosurgery was one of 7 early Milestone adopter specialties, beginning use in July, 2013. Early milestone data will establish benchmarks prior to utilization for "high stake" decisions such as promotion, graduation, and termination.

CONCLUSIONS: The full impact of the neurosurgical Boot Camps and Milestones on residency education remains to be measured, although published data from the first years of the Boot Camp Courses demonstrate broad acceptance and early effectiveness. A complementary junior resident course has now been introduced for rising second-year residents. The Milestones compatible evaluation system now provides for multi-source formative and summative evaluation of neurosurgical residents within the new ACGME reporting rubric. Combined with consensus milestone assignments, this system provides new specificity and objectivity to resident evaluations. The correlation of milestone level assignments with other measurements of educational outcome awaits further study. (J Surg 71:e83-e89. © 2014 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: internship and residency, assessment, educational, graduate medical education, neurosurgery

COMPETENCIES: Professionalism, Interpersonal and Communication Skills, Practice-Based Learning and Improvement

INTRODUCTION

Professionalism may be defined as "*the skill, good judgment, and polite behavior that is expected from a person who is trained to do a job well.*"[1] It is derived from the Latin word *profiteor*, to profess, in the connotation of making a formal commitment as in a monastic oath.[2] Therefore, simply

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engaging in a profession does not make one a "professional." Many authors have tried to specify the additional characteristics of professionalism, such as the possession of special skills and knowledge, the exercise of autonomous thought and judgment, and a responsibility to individuals and society through commitment to a set of principles.[2] In addition, the Accreditation Council for Graduate Medical Education (ACGME) has noted the existence of certain moral principles underlying professionalism: excellence, humanism, accountability, and altruism.[3]

All the "old professions," including medicine, the clergy, teaching, and law, adopt definitions of *professionalism* that go beyond simply engaging in a trade.[2] For physicians and surgeons, the process of becoming a professional involves the transition from a medical student to an experienced clinician. Until the 1970s, the teaching of professionalism in medicine involved exposure to "role models," such as relatively distant senior faculty, more accessible junior faculty, residents, and even peer medical students using examples and parables and demonstrating a set of unwritten rules and attitudes, with little explanation provided and no reflection required on the part of the trainee.[4,5] Today, most medical schools and residency programs provide an explicit professionalism curriculum, including course and lecture topics such as ethics, humanism, and the doctor-patient relationship. However, the ideal process for professionalism training is likely to encompass elements of both approaches. Although formal courses provide organized and foundational knowledge, their effectiveness is uncertain, whereas the "hidden curriculum" of mentorship, taught during day-to-day activities in the hospital, clinic, and operating room, is insufficiently comprehensive and objective.[3]

These combined training strategies require 3 features to be successful: (1) setting well-defined professionalism goals within the residency program, (2) the use of continuous, multimodal assessment, and (3) the freedom to employ teaching strategies appropriate to the defining characteristics of each clinical specialty, particularly in the case of demanding and challenging surgical disciplines.

We report some early experience with 2 specific interventions developed to foster the teaching and continuous evaluation of professionalism and interpersonal communication skills within neurosurgery programs in the United States: the Society of Neurological Surgeons' (SNS) "boot camp" courses (postgraduate year [PGY]-1 and -2) and the ACGME Neurological Surgery Milestones and their associated assessment tools.

BACKGROUND

In 2002, the ACGME and the residency review committee for each subspecialty mandated that residency education incorporate the 6 ACGME core competencies into the training curriculum: (1) patient care, (2) medical knowledge, (3) practice-based learning and improvement, (4) interpersonal and communication skills (ICS), (5) professionalism, and (6) systems-based practice.[6] Of these requirements, 4 have been tenets of residency training since William Halsted conceived the modern surgical training in the 1880s.[7] However, the formal teaching of the 2 primarily behavioral competencies, "ICS" and "professionalism," posed a complex and novel challenge to neurosurgical educators, because of the perceived abstract nature of these competencies and the lack of previous formal training in these competencies by neurosurgical educators themselves.

Surgeons, including neurosurgeons, are mostly conservative regarding educational hierarchies and pedagogy.[8-11] Some surgical educators argued that behavioral competencies are adequately taught using the apprenticeship model. Nevertheless, in response to the new regulatory imperative, residency programs slowly developed and implemented specific curricula for professionalism and ICS education, likely improving patient care delivery, safety, and satisfaction.[12,13] Within this context, neurosurgical educators developed the SNS boot camp courses.

SNS BOOT CAMP COURSE INITIATIVE

The SNS is the oldest neurosurgical professional organization in the world and comprises program directors, department chairs, and other educational leaders within the specialty of neurological surgery in the United States.[14] Following the introduction of ACGME core competencies in 2009, as described earlier, the ACGME incorporated the first year of postgraduate training (PGY-1 or "intern") formally into all US neurosurgery programs, thus replacing the so-called preliminary year in general surgery.[15]

Concerns about the heterogeneity of incoming residents in medical knowledge, psychomotor skill, and proficiency in professionalism, communications, and leadership led the Committee on Resident Education of the SNS to establish foundational courses for entering and for junior neurosurgical residents to teach and assess this material. Subsequently, an SNS steering committee initially evaluated a small number of existing "pilot courses" that focused on psychomotor skills related to basic neurosurgical procedures, with some variable exposure to professionalism and ICS concepts. The aim was to expand these courses, develop a systematic curriculum vetted by program directors nationally (through the SNS), and replicate them at different regional locations throughout the country, to reach all trainees in US residencies.

In 2010, the first national courses were held at 6 regional locations with overwhelmingly positive trainee and faculty reviews.[16] These courses were held over 3 weekends (2 simultaneous courses per weekend). The course structure included 9 didactic lectures, 10 procedural skill stations, and 6 emergency craniotomy skill stations (Table 1). All course