

A Literature Review of Professionalism in Surgical Education: Suggested Components for Development of a Curriculum

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BACKGROUND: While it is evident that a surgeon must master medical knowledge and technical skill, there are other “soft skills” that are essential to a successful surgeon. One of these skills is *professionalism*. The challenge in surgical education lies in developing an effective professionalism curriculum and a related method of evaluation.

OBJECTIVE: Our review updates the literature and provides recommendations for improving instruction and evaluation of professionalism.

DESIGN: A literature review was conducted using *PubMed*, *Google Scholar*, and *Web of Knowledge*. We restricted our search to documents published from 2009 to 2012 that address methods of teaching and tools for assessing professionalism in surgical education.

RESULTS: Sixty-three documents were reviewed, with 14 fitting our search criteria for professionalism in surgical education completely. Other articles focused on the topics of professionalism in surgery, medical professionalism, and professionalism education in medical specialties other than surgery.

CONCLUSIONS: Development of a professionalism curriculum for surgical residents might begin with defining professionalism in terms of tangible behaviors. The program might also include a precurriculum preparatory course and simulation-based training. Residency programs must also maintain professionalism among its faculty. Assessment in the form of multisource feedback that is consistent with observable behavioral definitions of professionalism should also be considered in evaluating resident professionalism. (J Surg 70:408-422. ©2013 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: professionalism, surgery, education, assessment, teaching

COMPETENCIES: Professionalism, Interpersonal and Communication Skills, Patient Care

INTRODUCTION

The field of surgery incorporates medical knowledge with a mastery of technical skill. Although it is evident that a surgeon must demonstrate excellence with his tools, there are other “soft skills” that are essential to a successful surgeon. One of these skills is *professionalism*. The Accreditation Council for Graduate Medical Education (ACGME) includes professionalism among its 6 core competencies (the other 5 are patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; and systems-based practice), of which residents are to be regularly evaluated.

Not only is it vital for a surgical residency program to ensure that its residents demonstrate professionalism so as to meet the ACGME requirements, but it is also essential for effective patient care. Current literature has documented the association between unprofessional physician behavior and adverse patient outcomes. For e.g., in their review, Bahaziq et al.¹ revealed how various instances of unprofessional physician behavior have contributed to cases of compromised care, adverse outcomes, patient dissatisfaction, and malpractice litigation. These findings are consistent with another review that focused on disruptive surgeon behavior. Patel et al. noted that deficiencies in professionalism by surgeons can have adverse effects on patient safety, patient satisfaction, and surgical team morale.² These actions impair communication and information exchanges among the physician, patient, and medical staff. Furthermore, a negative effect on morale can also lead to reduced team collaboration. Based on a national survey, specific behaviors that were deemed unprofessional and disruptive were identified.³ Such behaviors include making degrading comments, cursing, throwing objects,

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TABLE 1. Literature Reviews Addressing Professionalism in Surgery

Author	Journal and Year	Title
Wang	Eur J Cardiothorac Surg (2011)	A competency framework in cardiothoracic surgery for training and revalidation—an international comparison.
Patel	J Bone Joint Surg Am (2011)	The disruptive orthopaedic surgeon: implications for patient safety and alpractice liability.
Nwomeh	Pediatr Surg Int (2011)	Emerging ethical issues in pediatric surgery.
Dreyer	Surgeon (2010)	Assessing professionalism in surgeons.
Schwartz	Acad Psychiatry (2009)	Developing a modern standard to define and assess professionalism in trainees.
Iramaneerat	J Surg Educ (2009)	Instruction and assessment of professionalism for surgery residents.
Helft	J Surg Educ (2009)	Ethics education in surgical residency programs: a review of the literature.
Arnold	Clin Orthop Relat Res (2006)	Responding to the professionalism of learners and faculty in orthopaedic surgery.
Gofton	Clin Orthop Relat Res (2006)	What we don't know we are teaching: unveiling the hidden curriculum.
McCulloch	Lancet (2006)	Surgical professionalism in the 21st century.

sexual harassment, and refusing to speak and work with a colleague.³ The challenge in surgical education lies in developing an effective professionalism curriculum and a related method of evaluation to address these problems.

The purpose of this review is to update the literature and provide recommendations for improving instruction and evaluation of professionalism. In this article, we investigate the existing methods of teaching and assessing professionalism in surgery as documented in the literature. We also provide suggested components for the development of a model professionalism curriculum. Additionally, suggestions for areas that require further study are provided. We do recognize other literature reviews on the subject of professionalism in surgery that have been conducted; we cite these works in [Table 1](#).

METHODS

We conducted a literature search on the topic of professionalism education in surgery. A search using the key phrases relevant to our topic of interest (“medical professionalism”, “professionalism education”, “surgery AND professionalism AND education”, “surgeon professionalism”, and “surgical professionalism”) was conducted using the following search engines: *PubMed*, *Google Scholar*, and *Web of Knowledge*. We restricted our search to documents published from 2009 to 2012. This time frame was determined based on previous literature reviews that have been conducted on the subject of professionalism in surgery (i.e., the last comprehensive review we could identify was conducted in 2009). We focused on methods of teaching and tools for assessing professionalism in surgical education. Articles that did not explicitly address professionalism education in surgery, but were considered potentially applicable were also included. These publications were studies of professionalism in medical students and nonsurgical medical specialties, such as anesthesiology, pediatrics, and emergency medicine. We excluded publications that were not written in English, unpublished

abstracts, and were not available through the online databases. We attempted to reflect a significant representation of the published literature, but our search should not be considered as exhaustive.

RESULTS

Synthesis

Of the 63 documents reviewed, only 14 fit our search criteria for professionalism in surgical education completely. Others focused on the topics of professionalism in surgery, medical professionalism, and professionalism education in medical specialties other than surgery. [Table 2](#) provides a summary of the 14 articles that explicitly deal with professionalism in surgical education. The following sections explore current trends and studies that have the potential to contribute to the advancement of professionalism education in surgery.

Defining Professionalism

One challenge to professionalism education is identifying a standardized definition and determining what specific characteristics and behaviors describe a professional surgeon. The ACGME provides the following definition of professionalism:

- residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles and
- residents are expected to demonstrate:
 1. compassion, integrity, and respect for others;
 2. responsiveness to patient needs that supersedes self-interest;
 3. respect for patient privacy and autonomy;
 4. accountability to patients, society, and the profession; and

TABLE 2. Articles Used to Review Professionalism in Surgical Education

Author	Journal	Institution	Method of Evaluation	Study Size	Description
Rowland et al. ¹³	J Surg Educ	Dartmouth Medical School	Analysis of oral certifying exam (OCE) results	Follow up data available for 225/326 course participants	Study of a course designed to remediate surgical residents who were identified with deficiencies relating to the OCE.
Bearman et al. ³¹	J Surg Educ	Monash University	Questionnaire	n = 12	Pilot study of a simulation-based surgical curriculum designed to address surgical competencies.
Patel et al. ²	J Bone Joint Surg Am	Southern Illinois University School of Medicine	Literature review	43 articles included in study	Discussion of causes and consequences of disruptive orthopedic surgeon behavior.
Todd et al. ¹⁵	Am J Surg	New York University Langone Medical Center	Pre- and post-course surveys	n = 8	Study of a transitional curriculum for postgraduates entering a surgical internship.
Hochberg et al. ⁸	Am J Surg	New York University Medical Center	<ul style="list-style-type: none"> • Self-assessments • Six-station objective structured clinical exam (OSCE) • National survey 	<ul style="list-style-type: none"> • Study 1: n = 17-25 residents/ y over 3 years • Study 2: cohort n = 9 • Study 3: survey completed by 41 residency program directors 	A 3-part study assessing the implementation of professionalism curricula in the context of a surgical residency.
Dehmer et al. ¹⁶	Am Surg	University of North Carolina at Chapel Hill	Pre- and post-course written exam and survey	n = 18	A surgical boot camp type curriculum was implemented, receiving positive reviews.
Ponton-Carss et al. ³⁴	Am J Surg	University of Calgary	<ul style="list-style-type: none"> • Objective structured performance related exam • Checklists and global rating scales 	n = 14	Study of the validity of an objective structured performance related examination in assessing communication, professionalism and surgical skills.
Davis and Lee ³³	Plast Reconstr Surg	Stanford University Hospital and Clinics	<ul style="list-style-type: none"> • OSCE • Six-point scale and 3-point scale 	<ul style="list-style-type: none"> • n = 6 • Two each from PGY 4, 5, and 6 	<ul style="list-style-type: none"> • A plastic surgery specific OSCE was implemented. • Exam addressed all 6 ACGME core competencies.
Hochberg et al. ⁹	Am J Surg	New York University School of Medicine	Six-station OSCE	Eligible residents participated were 15/27 in full course of study	Study of an innovative curriculum aimed at teaching professionalism and communication.

Park et al. ¹⁹	Acad Med	University of Toronto	<ul style="list-style-type: none"> • Analysis of resident interviews 	Thirty-four semi-structured interviews of surgical residents and faculty at 2 academic institutions	Investigates how surgical residents learn professionalism.
Fernandez et al. ³²	J Surg Educ	Tufts University School of Medicine	Likert based multi-item assessment.	<ul style="list-style-type: none"> • Thirty-nine PGY 1, 2, and 3 residents • Ten followed between PGY 1 and 2 • Four followed all 3 years 	<ul style="list-style-type: none"> • Evaluation of full patient simulation training. • Addresses success and challenges.
Hu et al. ²⁸	Am J Surg	Center for Surgery and Public Health, Brigham and Women's Hospital	Narratives analyzed by research team	<ul style="list-style-type: none"> • Twenty-four stories from 9/10 cases. 	Investigating the potential value of using video and audio recordings of complex operations in surgical education.
Selden et al. ¹⁷	Neurosurgery	Oregon Health & Science University	Survey	<ul style="list-style-type: none"> • US neurosurgical PGY-1 residents were 186/197 • Sevent-five neurosurgical faculty from 36/99 programs 	Study of a boot camp course for incoming residents.
Antonoff and D'Cunha ¹⁸	J Surg Educ	University of Minnesota	<ul style="list-style-type: none"> • Forty-six item survey • Fifty point multiple choice exam • Objective structured assessment of technical skills exam 	Twenty-two senior medical students enrolled in course	Evaluation of a preparatory course offered to senior medical students entering surgical residencies.

5. sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.⁴

The ACGME has provided an outline of attributes, whereas others have sought to define professionalism in terms of tangible behaviors. The Department of Anesthesia at the Columbia University Medical Center conducted one such study.⁵ Here, authors identify and classify outstanding operating room behavior as observed by students. Examples of exemplary operating room behavior were grouped into themes. These include calmness, teamwork, teaching, patient communication, comfort, and respect.⁵ In this way, a focused and structured approach to learning professionalism and other good operating room behaviors can be developed.

Another study by Green et al.⁶ held 22 focus groups that identified 68 specific behaviors as indicators of professionalism. From this list of 68 behaviors, authors conducted a national survey that involved nurses (n = 237), patients (n = 415), and physicians (n = 214). Based on the ratings of the observability and importance of physician behavior, authors were able to generate 2 short lists of professional behaviors specific to patients (16 items) and nurses (14 items); a list for peer-assessment of physicians proved more of a challenge. Some of these signs include “answers questions from patients and families,” “follows-up to ensure proper care,” “communicates orders clearly and effectively,” and “pays attention to cleanliness and comfort of patient areas.”⁶ The authors demonstrate that lists defining professionalism in terms of visible behaviors can be produced and can be meaningful in evaluating physician professionalism.

A study by Regis et al.⁷ also highlights the importance of incorporating multiple perspectives in assessing professionalism in residents. This study compared lists of attributes and behaviors of physician professionalism produced by resident physicians and patient families. These lists were generated from residents in 3 focus groups and semi-structured interviews with patient families. In addition to developing lists of their own, patient families selected 5 items from the lists generated by residents. The authors noted that the similarities between families and resident physicians appear to represent an underlying understanding of professionalism between the different sides of medicine.⁷ Authors also identified differences between patient families and residents as a potentially useful resource for developing more inclusive evaluation and curriculum.⁷

Formal Curriculum

Studies have demonstrated that the introduction of professionalism into the formal classroom curriculum of the surgical resident has proved to be successful. An annual 7-session professionalism curriculum at the New York

University School of Medicine Department of Surgery resulted in increased resident professional skills.⁸ Ratings of perceived professionalism skills were evaluated based on self-assessment on 22 items that covered the 6 domains of professionalism as defined by the ACGME (accountability, ethics, altruism, excellence, patient sensitivity, and respect). The study demonstrated an improvement over the 3 years, in self-perceived skills covering all 6 domains of professionalism. Residents observed professionalism skills were evaluated using a 6-station objective structured clinical examination (OSCE) with trained standardized patients. This aspect of the study also indicated improvements in professionalism over the 3 years.

An earlier study by the same department similarly found an improvement through implementing a course consisting of 6 interactive sessions, which taught: information gathering, rapport building, patient education, delivering bad news, responding to emotion, and interdisciplinary respect.⁹ This study also utilized the 6-station OSCE evaluation tool. The study was completed by 15 of the 27 surgical residents who took an OSCE pretest, the 6 seminars, and the OSCE post-test. Statistically significant improvements were found in 2 of the 3 subdomains of communication (information gathering, patient education, and counseling) and 3 of the 4 subdomains of professionalism (sensitivity to the patient, working with an interpreter, and delivering bad news). Authors note that the subdomains that did not result in statistically significant improvements (relationship development and accountability) were not targets of the curriculum.

It was also found that novel curricula are successfully being developed for teaching professionalism to preclinical medical students. One innovative curriculum that targets professionalism is the “Schwartz Communication Sessions” at the Warren Alpert Medical School of Brown University.¹⁰ The curriculum consisted of cases and videos, large and small group discussions, role-playing, skills practice, guest patient presentations, and multidisciplinary panels.¹⁰ The curriculum was particularly successful in the area of professionalism, and elicited ratings of excellent or exceptional by 83% of the faculty members and 52% of the students. A similar interdisciplinary approach to teaching professionalism from the National University of Ireland Galway Medical School also met with positive results.¹¹ An interdisciplinary professionalism curriculum was taught using the enquiry-based self-directed learning method. The students presented their work through a scientific essay based upon scenarios that incorporate ethical, legal, sociologic, psychological, and technological aspects of health, as well as illness and disease. Although the study does not incorporate quantitative data, authors noted the studies provided evidence of professional output and demonstrated the benefit of an interdisciplinary professionalism curriculum. Also demonstrating success is the professionalism and the practice of medicine, a novel 2-year

longitudinal course at the Keck School of Medicine at the University of Southern California.¹² A survey of students showed that 79% had gained skills in relation to professionalism as a result of the professionalism and the practice of medicine course.

Specialized curricula can be provided for individuals who have been identified as having deficiencies in professional skills as well. A 20-year study followed general surgery residents who had failed (or were identified as at risk for failing) the oral certifying examination of the American Board of Surgery.¹³ These residents enrolled in a course designed to improve success on the examination; the course included topics of communication and professionalism. Days one to three of the program consisted of instruction, mini-oral examinations, group exercises, exercises in case presentations, video feedback sessions, and individual assessments. On day 2 formal mock oral examinations were held. Day 5 included a debriefing with participant, surgeon, and behavioral scientist. It was found that 97% of the residents who completed the course subsequently passed the exam.

Additionally, it has been suggested that training in the area of emotional intelligence can foster development in the area of professionalism. Taylor et al. proposed that a curriculum specific to emotional intelligence fosters development in professionalism that is not possible through the existing hidden curricula.¹⁴ Authors define a curriculum that is broken up into 4 components, which include enhancing one's: (1) personal discovery; (2) ability to manage yourself; (3) awareness of groups; and (4) ability to manage relationships. Authors also acknowledge the challenges to such a curriculum, which include establishing familiarity of emotional intelligence within the faculty and the time commitments that would interfere with the demanding nature of residency programs.¹⁴

Boot Camp

A different approach to developing professionalism in surgical education is the implementation of preparatory, "boot camp"-like courses. General surgery interns at the New York University School of Medicine were found to have an improvement in confidence levels following a "Surgical Intern Survival Skills" curriculum; one of the addressed skills was professionalism.¹⁵ The Department of Surgery at the University of North Carolina has also implemented a surgical boot camp course for new residents.¹⁶ The course includes addressing professionalism alongside medical knowledge and skills. It elicited "overwhelmingly positive" responses by residents after completing the course. Residents commented that there was "no risk in failure" through this type of training, and that "the most beneficial part was that none of the attendings expected us to know how to do anything so they really went over the basics, which is something that people may

never have had explained to them."¹⁶ One faculty reported that the curriculum promoted "excellent team building, [and] show[s] PGY-1 residents that they are part of neurosurgery."¹⁶ The Society of Neurological Surgeons also developed and organized a boot camp course for incoming residents that involved 94% of the United States neurosurgical program year-1 (PGY-1) residents.¹⁷ The curriculum sought to promote quality, patient safety, and professionalism. Residents felt the course met its objectives and a significant improvement between pre- and post-course testing of course content was reported.

Although preparing surgical residents by means of boot camp courses has gained a following, other programs seek to address professionalism even prior to entering residency. The Department of Surgery at the University of Minnesota implemented a course offered to senior medical students entering surgical residencies, where professionalism skill sets was one of the 3 areas of focus.¹⁸ The month long course consisted of 55 sessions of interactive didactics, small group discussions, simulation sessions, mock page exercises, and team-based problem solving.¹⁸ These sessions covered 19 ward-management tasks, 12 operative and technical skills, and 4 professionalism skill sets.

Role Modeling and the Hidden Curriculum

The literature demonstrates that role modeling is an important means of teaching professionalism. A study from the University of Toronto and the University of Manitoba specifically investigated how professionalism is learned in a surgical residency.¹⁹ Participants in the study (residents and faculty) identified role modeling as the most useful source of learning professionalism. Role modeling was also identified by preclinical medical students at the University of Washington as their primary means of learning professionalism.²⁰

Focus groups conducted within the University of Toronto, Faculty of Medicine identified challenges in teaching and evaluating professionalism.²¹ Specifically, it was the faculty's own unprofessionalism and lack of an opportunity to address these deficiencies that proved to be the greatest challenge to teaching professionalism, given the importance of role modeling. Some of these behaviors included constant lateness, inappropriate dress, and making negative comments about colleagues or patients in front of students.²¹ Explanations for these unprofessional behaviors produced by the focus groups were that professionalism is not taught, stress, institutional and personal tolerances to unprofessionalism, and individual lack of insight and character defects.²¹ The authors in this study suggest that minor to moderate deficiencies of faculty professionalism be met with greater attention to identification, discussion, self-reflection, and remediation.²¹

One way of addressing the concerns about faculty professionalism is through the use of student assessment

of faculty. This student assessment was examined by the Department of Pediatrics at McGill University.²² The study found that having medical students rate clinical faculty had the potential to promote professional behavior and mitigate unprofessional behavior. Programs that seek to develop faculty members' professional skills are another way to improve on faculty professionalism. Such a program was evaluated in the Department of Medicine at the Taipei Veterans General Hospital.²³ From 10 different specialties, 134 clinical instructors participated in the faculty development curriculum that focused on the ACGME competencies. The program consisted of 2 parts: a basic clinical-practice training course and a post-course training workshop. The participants indicated that the program helped them with the skills necessary for teaching and evaluating ACGME competencies of PGY-1 residents.

The literature also indicates that consideration should be given to the unprofessional behavior of role models. Specifically, presenting examples of unprofessional behavior may be helpful. Examples of unprofessionalism as seen in cases of malpractice provide an educational opportunity.²⁴ Furthermore, looking at residents' own lapses of professionalism was shown to be an educational opportunity.²⁵ Internal medicine residents anonymously reported incidents of patient safety issues such as lapses of professionalism, decision error, and workload difficulty. Reporting was done through an online, narrative format. The reports were used to facilitate small group discussions held by the faculty and provided to hospital patient safety officers to generate systematic interventions. Authors suggest that this blame-free method of incident reporting represents an opportunity to actively engage residents in patient safety.

Johnston et al. reported an inverse relationship between medical student seniority and professionalism scores in the United Kingdom based on an online questionnaire.²⁶ This finding correlated with greater exposure to unprofessional physician behavior by senior students. The behaviors identified by students included bullying, racism, sexism, and disrespect for patients.²⁶ Besides a general decline in professionalism scores, the study also looked at gender differences. Female students scored higher than male students in all aspects of professionalism. The scores for male students declined consistently; professionalism scores were highest in the first year, followed by the third year, and finally the fifth year. However, female students' scores were relatively consistent between third and fifth year. The authors suggest that male students may be more impressionable in regard to unprofessional behavior than female students. However, the authors acknowledge that more research on the gender differences is needed.²⁶

Another strategy to improve professional development looks at the self-rated professionalism of residents against that of their peers and learning environment.^{22,27} In a study, the theme of accountability of the learning environment was negatively associated with self-perceptions of

accountability, altruistic and ethical behavior, respect, and sensitivity to patient needs.²⁷ Authors determined this through surveys provided to emergency medicine, internal medicine, pediatrics, psychiatry, and surgery residents. Also assessing the hidden curriculum are surveys that evaluate medical faculty.²² Todhunter et al. described the development and implementation of a Faculty Professionalism Evaluation form at McGill University. The form included 34 behaviors, such as showing compassion and empathy, providing direction and feedback, admitting errors or omissions, and avoiding derogatory language.²² The form was provided to medical students to assess the clinical faculty in pediatrics. Through generalizability analysis, exploratory factor analysis, and content analysis of comments, authors determined the form was valid and reliable for the assessment of faculty professionalism. These 2 studies demonstrate that despite the seemingly passive nature of the hidden curriculum, professionalism can be addressed and maintained through such evaluation.

The operating room represents an environment where residents have ample exposure to surgeon behavior. One study looks at the use of intraoperative storytelling as a way of teaching the core competencies, including professionalism.²⁸ In this study, 10 surgical procedures were audiotaped and videotaped. The footage was transcribed and reviewed by a surgeon, a cognitive psychologist, and an educational psychologist. Narrative stories were first identified and characterized, then assessed for themes in regard to the types of stories and their teaching points. Three types of stories were identified: "practice changes from lessons learned," "personal training stories," and "near misses and adverse events." Of the teaching points, "clinical teaching objectives" were most prominent. Authors also identified 4 stories that dealt with professionalism and surgical culture. This study demonstrates that stories are told in the operating room and those are used for teaching. Authors encourage a more conscious and purposeful use of intraoperative narratives for teaching.²⁸

As the importance of the hidden curriculum becomes more apparent, attention to improving professionalism in all medical settings can indirectly lead to positive effects on medical education. The implementation of a Code of Professionalism at the Mount Sinai Medical Center obstetrics unit is one such example.²⁹ The code provided a single standard for professionalism among staffs. Assessment of the possible effects of the Code of Professionalism was assessed with 2 surveys, the United States Agency for Healthcare Research and Quality, and the Institute for Safe Medication Practices Survey on Workplace Intimidation. These surveys found statistically significant improvements in "teamwork within units and management support", "organizational learning", and the frequency of submitted professionalism reports.²⁹ Also found to be statistically significant improvements were "reluctance or refusal to answer questions, return phone calls or pages by

physicians/prescribers,” “strong verbal abuse by physicians/prescribers,” and “impatience with questions by others.”²⁹

Despite the need for improvements in the behaviors of surgeons and residents have been used in the professionalism curriculum of medical students.³⁰ Medical students enrolled in a surgical clerkship were required to write 3 essays addressing professional behavior, unprofessional behavior, and if their ideas on professionalism changed since the beginning of the clerkship. Professional behaviors identified by students included effective communication, spending extra time with a patient, and protecting patients’ privacy.³⁰ Unprofessional behavior included inappropriate conversations, belittling patients, and mistreating staff.³⁰ The professional and unprofessional behaviors were used in a directed discussion. Seventy-five percent of the students stated that their attitudes toward professionalism changed as a result of the clerkship. A prominent theme was that student outlook on surgeon professionalism changed for the better after their clerkships. Authors indicated that the surgical clerkship is valuable to professional development and that it was feasible to integrate the hidden curriculum into an instructional session.³⁰

Simulation

Simulation-based training has shown to be a successful means of incorporating professionalism into the surgical education curriculum.³¹ A 2-day pilot course was implemented and showed that a simulation-based education is able to address communication, teamwork, leadership, and professionalism. The first day involved exercises in collecting multisource feedback from participants’ current workplace, performing a learning needs analysis, and a 3-way conference (including the participant, an educationalist, and a surgeon). The second day involved training in advanced cardiac life support, 2 cardiac arrest simulations, and a postoperative hemorrhage simulation with peer observation. Participants and observers engaged in reflection immediately after the simulations. Based on a survey of participants, authors found that the curriculum met its objectives and was welcomed by participants who grasped complex skills and concepts.³¹

Another study investigated the use of patient simulation training in a surgical residency.³² Case simulations were developed based on the difficulty in practicing the clinical management problems, ability to represent the problem through simulation, relevance to certifying exams, and relevance to institutional reports on quality, morbidity, and mortality. Scores for resident performance were generated using a Likert-based multi-item assessment in areas of medical knowledge, professionalism, patient care, diagnosis, management, and communication. The authors also cite anecdotal evidence speaking of the success of the simulation training. Residents indicated that their

experiences with the simulations were beneficial in future, similar clinical situations.³²

Patient Encounters

A recurring theme in the published literature is the use of standardized patients to assess professionalism. Specifically, trained standardized patients rate resident performance in surgical residencies.^{8,9,33,34} A University of Massachusetts Medical School study³⁵ evaluated the reliability of standardized patients’ scores on students’ professionalism. It was found that trained standardized patients rated students inconsistently with medical doctors (MDs) and lay raters, who were also included in the study. Furthermore, standardized patients were found to produce greater variability in the scoring of students. It was also found that there was consistency in the rank ordering of students among standardized patients.

Inconsistency also arises in evaluating professionalism through real-life patients. While standardized patients have been studied, real patients and patients’ families have also been looked to for resident evaluation. One study conducted at the Children’s Hospital of Philadelphia compared nurse-, faculty-, patient family-, and self-evaluations of pediatric residents.³⁶ This study of professionalism and interpersonal skills showed that MDs and registered nurses (RNs) tended to give higher scores than patient families. Authors suggest that the statistically significant difference in scores could be attributed to the residents interacting with patients and families differently than they do with MDs and RNs. The difference could also be attributed to patients and families having different standards from MDs and RNs. Finally, authors note that statistically significant differences may not actually have important clinical manifestations.

The issue of bias that results from the direct observation of standardized patient encounters is also present in much of the literature. One study from the New York University School of Medicine³⁷ attempted to mitigate this bias by examining the use of unannounced standardized patients (USPs) to assess professionalism and communication skills. The study determined the use of USPs was feasible and acceptable in the setting of the emergency department. Due to resident scheduling problems only 17 of the 27 USP encounters were completed successfully. The unpredictable environment of the emergency department also led to some USPs being examined by residents who they were not intended for. Of the encounters, there were 44% positive and 28% false-positive detection rates of USPs. Despite these findings, Cronbach’s-alpha assessment of resident performance scores demonstrated reliability. A survey of residents showed that the encounters did not infringe on resident practice, and did not lead to residents feeling uncomfortable or suspicious of patients.

Experiential Learning

Experiential learning opportunities continue to be an important component in professionalism education. Separate studies providing analyses of narratives written by medical students in clerkships have verified the positive influence clinical experience has on professional development.³⁸⁻⁴⁰ These studies also indicate the use of narratives as an opportunity for reflective learning. Other experiences include student community service⁴¹ and rotations in rural medicine.⁴² These too, provide experiences that convey professionalism through an experiential approach.

In comparison with a predominantly lecture-based medical education, clinical experience has shown to produce greater results in terms of professionalism, as was concluded in a study conducted with medical students from England, Australia, and Wales.⁴³ Authors found that students with early patient interaction and opportunities to discuss professionalism in clinician led groups demonstrated a sophisticated and full understanding of professionalism compared with students who did not receive clinical experience.

Television and Movies

The use of fictional medical television programs and movies has been investigated as alternative ways of teaching professionalism. These sources have been found to encompass ethical issues along with examples of professionalism and particularly unprofessional behavior.⁴⁴⁻⁴⁷ Some of the unprofessional behaviors that can be seen in these sources involve sexual misconduct and issues relating to respect, integrity, compassion, and responsibility.⁴⁶ Some of the media included the shows *Grey's Anatomy* and *House*, and the movies *Patch Adams* and *Mr. Lorenzo's Oil*. Studies have all indicated that the inclusion of these movies and television shows into the professionalism curricula could be beneficial.⁴⁴⁻⁴⁷ Specifically, scenes from shows and movies could be included in classroom instruction to provoke group discussion and debate. A study by Klemenc-Ketis et al. describes the incorporation of movie viewing into the professionalism curriculum of Slovenian medical students.⁴⁴ This professionalism curriculum incorporates movie viewing, lectures, large group discussions, oral presentations, and essay writing. Additionally, the movie, *Wit*, was viewed twice. After an initial viewing, students paid particular attention to the specific aspect of professionalism in the second viewing. Based on open-coding analysis of essays and oral presentations, authors indicate that the curriculum successfully led the students to grasp key elements from the movie.⁴⁴

Virtual Teaching Methods

The use of online interactive virtual patients is another promising strategy for teaching medical professionalism.

A pilot study incorporated the skills of teamwork, communication, medication error, disclosure, and liability into a virtual patient case for medical students.⁴⁸ Authors point out that such virtual patient encounters ensure student exposure to professionally challenging scenarios and serve as an opportunity for feedback. Focus group discussion analysis indicated that students responded positively to it as a viable option for learning professionalism and welcomed its addition to their medical curriculum. Not only did students feel the virtual patient experience was authentic and increased clinical knowledge, but found the experience to be a more acceptable means of integrating professionalism into the curriculum as compared to the lecture-based teaching.⁴⁸

Another virtual teaching method utilizes online collaborative websites (wikis). In a study by Varga-Atkins et al.⁴⁹ wikis served as sites for posting resources and asking questions related to professionalism in the context of a problem-based learning curriculum. The authors assessed the success of the wikis through questionnaires and focus groups. The larger finding of the study was that the wikis successfully helped students in learning professionalism both directly, and indirectly. In a direct sense, wikis were successful in serving as a space for shared knowledge. The wikis also led the students to view themselves as professionals in using the wiki-space. In this indirect sense, the students were found to be conscious about the quality of their posts and contributions. Prior to the study, students noted that they were more informal about collaboration through electronic means.⁴⁹

Assessing Professionalism

Current development and use of professionalism assessment tools have shown promise. A common method is the use of a 360-degree instrument for assessing professionalism. This approach provides evaluation through multiple sources such as patients, patient families, nurses, physicians, and self-evaluation. One study utilized validated Likert scale questionnaires to evaluate pediatric residents.³⁶ Another study also used a 360-degree instrument incorporating a 5-point scale-based survey. This Education Outcomes Service Group of the Arizona Medical Education Consortium developed this particular instrument.⁵⁰ Both studies indicated the feasibility and validity of 360-degree instrument evaluations in assessing professionalism and communication skills in residency programs.

We have also found that 6-station OSCEs have been used to assess resident professionalism.^{8,9} Both studies were from the same author and were conducted at the New York University Department of Surgery. Standardized patients were used at each of the 6 stations to produce scenarios of professionalism challenges. These stations assessed advanced communication skills, admitting mistakes, delivering bad news, working as a team, working across

language and cultural barriers, and self-care.⁹ Standardized patients assessed residents using a checklist defined in terms of behaviors.

The Professionalism Mini-Evaluation Exercise (P-MEX) is one tool that has received further validation in assessing medical professionalism. This tool uses specific observable behaviors to assess professionalism. Although the P-MEX has proven to be reliable and valid in Western medical settings, it had yet to be validated in the cultural context of Japanese medical centers.^{51,52} The tool underwent adaptation for use in a Japanese medical center, where additional items were added after being generated in workshops. Evaluators use Likert scale responses (1-4) to assess residents on each item of the P-MEX. Both studies found the P-MEX valid and reliable as an assessment tool for professionalism in Japanese medical residents. These studies determined that the P-MEX evaluation tool is valid and reliable in both Western and Japanese settings.

The use of a conscientiousness index (CI) to assess first-year and second-year medical students represents another way of assessing professionalism.⁵³ Conscientiousness points were either awarded or deducted based on actions such as class attendance, submission of assignments and documentation by deadlines, submission of course evaluations, and participation in voluntary activities in students. The total points represent the student's CI. This evaluation tool was checked for validity by comparing CIs of students with faculty/staff judgments on students' professionalism and incident reports. Authors determined the validity of the CI in assessing professionalism after finding correlation between low-index scores and increase in incident reports and staff concerns regarding professionalism.

Compliance forms may serve to not only aid in assessing professionalism, but also in teaching professionalism.⁵⁴ A 17 item compliance form was used in an obstetrics/gynecology residency in an attempt to evaluate the ACGME competencies of professionalism, practice-based learning, and systems-based practice. Items on the form cover resident attendance, responsibilities, and project completion. Compliance form scores of residents correlated with other studies on resident's conflict styles, behavior, and PGY year. However, the compliance form did not correlate with faculty evaluations of resident behavior. Authors indicate that the compliance form serves to help residents understand and carryout ACGME competencies.⁵⁴

The idea of peer assessment of professionalism is another topic of interest. Specifically, authors have indicated that this method offers an opportunity for formative feedback.^{27,55,56} One study on implementing peer review among physical medicine and rehabilitation residents found mixed sentiments from residents.⁵⁷ Residents felt that although potentially beneficial, peer review has the potential to be misused in the face of personal grievances. The study also found that residents felt they were not

responsible for peer professional behavior and that peer review was not an important component in their development as physicians. However, the study did demonstrate that simply implementing peer review discussions brought about a change in attitudes. Residents taking part in peer review placed more emphasis on professional behavior and were more conscious of the importance of patient interactions than a control group that did not take part in peer review.

Although not directly assessing professionalism, tools that assess burnout can point out factors that are tied to unprofessional behavior. Brazeau et al. conducted a study on professionalism and its relationship to student burnout.⁵⁸ Through administration of the Professionalism Climate Instrument along with surveys of student burnout and empathy, an association was found between professionalism and lower scores for empathy and higher scores for burnout. A separate study by Dyrbye et al.⁵⁹ looked at medical students at 7 United States schools, also found that burnout was correlated with self-reported unprofessional behavior and a decline in altruism. Here, the Maslach Burnout Inventory, primary care evaluation of mental disorders depression screening instrument and the SF-8 Quality of Life assessment tool were incorporated into a survey and provided to students. These studies have applications in terms of identifying those at risk for unprofessional behavior and mitigating disruptive incidents.

Attitudes Toward Professionalism

The attitudes toward professionalism in surgical education have demonstrated a positive trend. A national survey of 41 surgical professionalism and interpersonal communications education Study Group members participated in a study that looked into the perceived level of professionalism of surgical department chairpersons or residency program directors.⁸ The study concluded that formal professionalism curricula in surgical residencies are being implemented. It also reveals that residents have improved professionalism skills, while program directors have increasingly positive attitudes toward professionalism.

Studies in other medical disciplines demonstrated that more attention must be given to addressing professionalism. A national survey conducted by the Council of Emergency Medicine Residency Directors investigated challenges in identifying and rating unprofessional behavior, and the challenges to its evaluation and remediation.⁶⁰ Out of 154 program directors, 77 responded to the survey. Among the findings in the survey, 51% described that their existing methods of identifying deficiencies in unprofessionalism were inadequate. Moreover, 55% program directors said the most common way that unprofessionalism was discovered was through unofficial faculty complaint. Another finding stated that 80% of the program directors

felt that professionalism was most difficult to remediate compared with most other competencies. In a written survey of 249 psychiatric residents at 7 United States programs, authors found that professional principles was one of the identified areas that needs greater educational attention.⁶¹ Similarly, a survey of Pediatric Residency Program Directors demonstrated that directors felt there was a deficiency in the structured curriculum, expertise, and evaluation for resident professionalism.⁶²

Although the surveys previously mentioned were restricted to those in the medical field, namely residents and program directors, Brockbank et al. performed a questionnaire-based study that included members of the public.⁶³ The study surveyed medical students, physicians, and members of the public. Looking at 10 examples of medical student misconduct, participants were asked to determine the level of acceptability and the course of action that was most appropriate. Compared with physicians, the public was more severe in judgment and selected greater punitive actions, whereas medical students were

most lenient. The authors concluded that misconduct is perceived differently among patients, physicians, and medical students, and this notion should be taken into account in professionalism education. A possible explanation is that medical students and physicians are aware of the limited clinical role of medical students and would be more lenient of misconduct. Also, as a consumer of healthcare, the public may expect utmost professional conduct from doctors.⁶³

CONCLUSIONS

Though there are still no standardized methods for educating our surgeons on professionalism, our review indicates that methods are being designed and verified. It has become evident that the level of professionalism among the medical community, including the specialty of surgery, is on the rise. Based on our review of the literature, we provide suggested components for a model curriculum and

TABLE 3. Suggested Components for Developing a Model Curriculum

Curriculum Components	Implementation
Professionalism is defined in terms of tangible behaviors. ⁵⁻⁷	<ul style="list-style-type: none"> • Lists of professional behaviors generated by focus groups have been published in the articles by Green et al.⁶ and Regis et al.⁷ • These behavioral definitions serve as a means for evaluating resident professionalism.^{6,7}
Residents are informed of the impact of unprofessional behavior. ¹⁻³	Residents should receive didactic sessions throughout their residency regarding professionalism and how it relates to patient outcome and malpractice lawsuits. ^{8-10,12,24}
Simulation-based training is implemented to introduce residents to common professionalism challenges. ^{31,32}	Simulations ensure patient safety and require residents to exercise professionalism as well as communication, teamwork, and leadership. ^{31,32}
The professionalism of the surgical faculty and institution will be maintained. ^{19,20}	<ul style="list-style-type: none"> • Formative feedback should be provided to instructors regarding their professional behavior.²² • Resources and feedback will be provided to faculty who are found to behave unprofessionally.^{21,23} • A code of conduct can be implemented to address the professionalism of all hospital staff.²⁹
Residents are assessed through 6-station objective structured clinical examinations. ^{8,9}	<ul style="list-style-type: none"> • Standardized patients assess residents based on defined professional behavior.^{8,9} • Communication skills, admitting mistakes, delivering bad news, working as a team, working across language and cultural barriers, and self-care will be addressed.⁹
Multisource feedback will evaluate the displayed professionalism of residents. ^{36,50}	<ul style="list-style-type: none"> • Assessment should be consistent with the behavioral definitions of professionalism.^{6,7,36,50} • Feedback should be evaluated through multiple sources such as patients, nurses, attending physicians, and self-evaluation.^{36,50}

TABLE 4. Suggestions for Further Research

Aspects of Professionalism Education	Suggestions for Future Study
Defining professionalism	<ul style="list-style-type: none"> • Defining professionalism in surgery through specific, observable behaviors
Boot camp	<ul style="list-style-type: none"> • Development of a standardized “boot camp” transitional curriculum for entering surgery residents
Simulation	<ul style="list-style-type: none"> • Using simulation to teach surgical professionalism (larger sample sizes)
Patient encounters	Use of unannounced standardized patients to evaluate surgical residents
Role modeling and the hidden curriculum	<ul style="list-style-type: none"> • The effects of implementing universal professionalism codes of conduct on surgical residents • Effects of assessing the professionalism of surgical faculty as a means of developing the hidden curriculum • Gender differences in professionalism role modeling • Assessing the purposeful incorporation of professionalism teaching points into intraoperative narratives • Correlation between individual surgical resident professionalism and that of the learning environment
Assessing professionalism	<ul style="list-style-type: none"> • The development and validation of professionalism checklists for objective structured exams • Using the assessment of burnout to mitigate unprofessional behavior in surgeons and surgical residents • Comparing how surgeons, surgical residents, patients, and nurses perceive professional surgeon behavior

related assessment plan. The development of a curriculum should begin with defining professionalism in terms of tangible behaviors. Such a curriculum would also educate the residents on the negative consequences of unprofessional behavior in terms of adverse patient care and malpractice lawsuits. Scenarios involving challenges to professionalism and opportunities to exercise professional behavior may begin with simulation-based training. A surgical residency should also seek to assess and maintain the professionalism of its faculty. In addition, we suggest that surgical residents receive regular evaluation through multisource feedback based on defined professional behaviors. These components are summarized in Table 3.

We recognize the limitations of our review. One of these includes our sources of literature; other databases could be used to perform an even more extensive search. Additionally, our study does not include literature prior to 2009. However, this was deliberate in light of a previous literature review conducted. As professionalism education is a rapidly developing field, a future literature review that updates our work should be conducted. As to specific areas of research, we suggest that further study be conducted in multiple areas. Our suggestions are summarized in Table 4.

These future investigations and those that have been presented in our review would provide a basis for the standardization of professionalism education in surgery. As advances in medical knowledge and surgical technique

contribute to improved patient outcome, improvements in the professionalism of our surgeons will have a similar effect.

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