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Professionalism in Residency Training: A Compilation of Desirable Behaviors and a Case-Based Comparison Between Pathologists in Training and Practice

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Abstract

Professionalism is one of the most important competencies for physicians but is also the most difficult to teach, assess, and manage. To better understand professionalism in pathology, we surveyed practicing pathologists and pathology residents and fellows in training. We identified 12 key desirable attributes of professionalism. In addition, 8 case scenarios highlighting unprofessional behavior were presented, and results between pathologists in practice and in training were compared. No significant differences between attending pathologists and residents were identified in how these cases should be managed. Our study demonstrated remarkable concordance between practicing pathologists and residents as to what constitutes professionalism and how to manage unprofessional behavior. Our case-based approach can be a useful technique to teach professionalism to both pathologists in practice and in training.

Keywords

ethics, medical education, mentoring, pathology residency, professionalism, residency training

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Introduction

Professionalism in medicine has been written about and discussed for decades, if not centuries, but the more recent codification of professionalism in the core competencies developed by the Accreditation Council for Graduate Medical Education (ACGME), and in the milestones of ACGME-accredited residency and fellowship training programs, has prompted new interest and vigor in defining and teaching professionalism, methods to assess professionalism, and approaches to manage and remediate unprofessional behavior. On average, approximately one-third of the milestones of every ACGME-accredited training program relate to professionalism (in which we also include interpersonal and communication skills).[1]

Unprofessional behavior in medical students, residents, and physicians in practice is one of the primary reasons for disciplinary action in medicine.[2-4] Of the 6 core competencies, professionalism is also the most difficult to assess and evaluate as well as to remediate.[5-8] Adding to the complexity of professionalism, several different approaches to defining it have been proposed, and educators struggle with best practices in teaching it at all levels of the medical continuum.[9-11] All of these issues and concerns are no less important for pathology program directors and residency training.[12,13] For example, pathology employers expect that resident and fellow graduates will

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demonstrate the highest ethical and professional attributes but are often disappointed, and pathology residency training programs struggle to address these issues and concerns in professionalism education.[14] The objectives of this study were to help define professional and unprofessional attributes or behaviors and to compare pathology faculty/staff and residents on how they would manage unprofessional behaviors depicted in several case scenarios.

Methods

Faculty, program directors, program coordinators, and key staff (eg, laboratory supervisors) at Departments of Pathology and Laboratory Medicine, Washington University School of Medicine/Barnes Jewish Hospital and Penn State Hershey Medical Center and College of Medicine were sent an e-mail in a 2015 survey asking them to "list at least 3-5 professionalism/ethical attributes/behaviors, in your opinion and/or from your experience, that you feel are most desirable/critical." The program directors and coordinators from all ACGME-accredited programs at Penn State were also surveyed as were pathology program directors on the national program directors listserv. The results were reviewed and condensed into 12 overarching themes (Table 1). In order to avoid bias, the survey responses were reviewed by 3 individuals, and the data in Table 1 represent the number of responses that fits into each category averaged for the 3 reviewers.

Based on the 12 professionalism themes identified by the surveys, 8 case scenarios were developed that attempted to encompass all 12 areas of professionalism. An online survey (Survey Monkey, Palo Alto, California) was developed and circulated to the pathology faculty/staff who participated in the first survey as well as pathology residents and fellows at the same 2 (ie, the authors') institutions. The surveys were identical except that the survey given to the residents/fellows asked them to list their top 5 professional attributes (just as the faculty/staff had previously done) before answering the questions. For the case scenarios, respondents were asked to choose the most appropriate course of action, as follows:

"In response to the given scenario, a residency program director should: Select a response from the options below.

i. Take no immediate action but continue to monitor resident behavior.
ii. Meet informally with the resident to discuss the behavior.
iii. Formally meet with the resident to discuss the situation and monitor behavior change. Escalate to formal remediation if insufficient change occurs.
iv. Formally meet with the resident and develop a remediation plan. Discuss next steps if remediation plan is not successful (eg, probation, nonrenewal of contract, immediate dismissal, etc, as appropriate).
v. Request a 'fitness for duty' evaluation before allowing the resident to return to duties.
vi. Formally meet with the resident and place on probation.
vii. Do NOT renew the resident's contract for the next academic year.
viii. Immediately dismiss resident."

Table 1. Attributes, Behaviors, and Qualities Identified as Important to Professionalism.

		Faculty/Staff Responses (%)	Resident Responses (%)	*P* Value
1	Dependability/reliability/follow through	43 (14.7)	20 (14.6)	.937
2	Respect (toward self, others, colleagues, and patients) selflessness, includes arriving on time	45 (15.4)	15 (10.6)	.200
3	Effective interpersonal and communication skills, team player, and collaboration	31 (10.7)	17 (12.2)	.610
4	Honest/trustworthy	30 (10.1)	12 (8.6)	.599
5	Accountability/taking responsibility	28 (9.7)	9 (6.7)	.285
6	Dedicated to learning and teaching	20 (6.9)	16 (11.8)	.100
7	Self-driven motivation/ hardworking and engaged	28 (9.7)	7 (4.8)	.108
8	Knowing limitations and when to ask for help, open to criticism, and humility	26 (8.8)	9 (6.2)	.393
9	Compassion/empathy	**14 (4.8)**	**14 (9.8)**	**.037**
10	Integrity	14 (4.7)	13 (9.6)	.066
11	Appropriate appearance	10 (3.4)	3 (2.2)	.476
12	Maintain confidentiality	4 (1.5)	4 (2.9)	.276
	Total responses	293 (100)	139 (100)*	
	Total responders	54	27	
	Responses/responder	5.4	5.1	

*Some additional responses not included in this table included resourceful, rational, leadership, curious, and reason.
$P < 0.05$ was considered significant.

The 8 case scenarios were based on actual cases but were modified to highlight certain behaviors and/or to maintain privacy and confidentiality. The case scenarios used in the survey are detailed in Table 2.

Statistics

A 2-sample z test for equality of proportions was performed using the "stats" package in *R* (R Foundation for Statistical Computing, Vienna, Austria) to test for significant differences between faculty/staff and residents in their responses to the open-ended question "name 3-5 most professional behaviors." The responses to the case scenarios were considered ordinal, and the Cochran-Armitage test was used to test for differences between faculty/staff and residents in their responses to the 8 survey questions.

Table 2. Case Scenarios Used in the Survey of Faculty and Residents.

Case scenario 1:
The supervisor of the laboratory calls you (the program director) because one of the AP/CP residents requested that several tests be added to a patient's laboratory requisition form. She thought it was unusual because the resident was not on call at the time and had no known clinical involvement with the patient. Upon investigation, you learn that the resident is romantically involved with the patient. When you question the resident, he denies requesting the additional tests and says that they were actually ordered by the woman's physician. You also subsequently learn that the patient's physician had no knowledge about the added tests and that the resident has frequently accessed the patient's electronic medical record without the patient's permission.

Case scenario 2:
The residency program director is called by the supervisor of the chemistry laboratory because the resident on call over the weekend repeatedly admonished a laboratory technologist for calling him. He repeatedly made comments that the technologist's questions were "stupid" and that he should "not be bothered."

Case scenario 3:
A clinical pathology resident consistently arrives to work late and leaves early. In addition, she frequently does not attend rounds in the laboratory and has never contributed a case at the resident-run weekly CP Interesting Case Conference. Fellow residents have complained about her "dumping beeper calls" on them, and calling off sick at the last minute causing other residents to pick up her duties for the day. She rarely acknowledges her fellow residents' help.

Case scenario 4:
A PGY1 AP/CP resident has repeatedly given incorrect information to physicians while on the CP service. She admits that she does not understand analytical methods but refuses to ask for help. In the weekly beeper report, she has been encouraged to consult senior residents and faculty, but she gets defensive when her incorrect responses are pointed out to her.

Case scenario 5:
While out of the office at a meeting, the medical director of the microbiology lab learns from a Facebook post by one of the residents on the microbiology service that her laboratory has just identified a, very rare, positive case of *Francisella tularensis*. The medical director sees that several other residents and laboratory employees have also seen the post and commented on it, including several posts related to "lawn mower disease" and "road kill" that contain graphic images of dead animals. The resident also responded on Facebook with insensitive comments that further describes the index patient and the involved hospital.

Case scenario 6:
In recent weeks, the residency program director has received multiple complaints from faculty and laboratory personnel that a PGY3 resident consistently comes to work looking disheveled, wearing tattered shoes, clothes that are significantly wrinkled, and shirts that are untucked. Several faculty members have reached out to the resident and discussed this with the resident as it is a recent change in his behavior and out of character for this individual. However, the unprofessional appearance continues. When the program director confronts the resident, he becomes argumentative, visibly angry, and tells him to, "Mind your own business!"

Case scenario 7:
During a department-wide case conference, an AP/CP resident presenting the case described a CMV-infected CML patient as "going downhill fast" and "circling the drain." A few weeks ago, this same resident was overheard telling a pregnant resident that the other residents were going to have to pick up her "slack" because, "She could not possibly be able to pull her own weight anymore."

Case scenario 8:
A PGY1 CP resident developed an early interest in hematopathology and worked with a more senior resident (who is also interested in pursuing a hemepath fellowship) to design a clinical research project. The PGY1 resident did the majority of the data collection and interpretation as well as making the poster for submission to a national meeting. The poster was accepted, but the PGY1 resident was unable to attend the meeting, and the presentation was done by the senior resident who attended the meeting. Upon return from the meeting, the senior resident surreptitiously wrote the paper with the faculty without including the PGY1 resident. He told the faculty that the PGY1 resident was not interested in working on the paper. The PGY1 resident learned about the paper after it was submitted to a journal for publication.

Abbreviations: AP, Anatomic Pathology; CMV, cytomegalovirus; CML, chronic myelocytic leukemia; CP, Clinical Pathology; PGY1, Post-Graduate Year 1; PGY, Post-Graduate Year.

Results

Fifty-four faculty/staff responses were received in response to the open-ended question "list at least 3-5 attributes/behaviors that, in your opinion and/or from your experience, you feel are most desirable/critical." The Survey Monkey survey received 28 responses from residents/fellows and 47 responses from faculty/staff.

Responses to the open-ended question showed common themes, which were condensed into 12 overarching categories shown in Table 1. A significant difference ($P = .037$) was observed in the category of "compassion/empathy," with more residents listing this trait as a sign of professionalism as compared to faculty/staff. No other differences between faculty/staff and residents reached clinical significance, although 3 categories did show disparity. More residents tended to list professionalism attributes that could be characterized as "integrity" and "dedicated to learning and teaching" than did faculty/staff. In contrast, more faculty/staff listed attributes of "respect for self and others" as a trait of professionalism than did residents (Table 1).

Faculty/staff and resident responses to the 8 case scenario-based survey questions are shown in Figure 1. No statistically significant differences were found between faculty/staff and resident responses. With each case scenario-related question in the Survey Monkey survey, there was an opportunity to free-text comments.

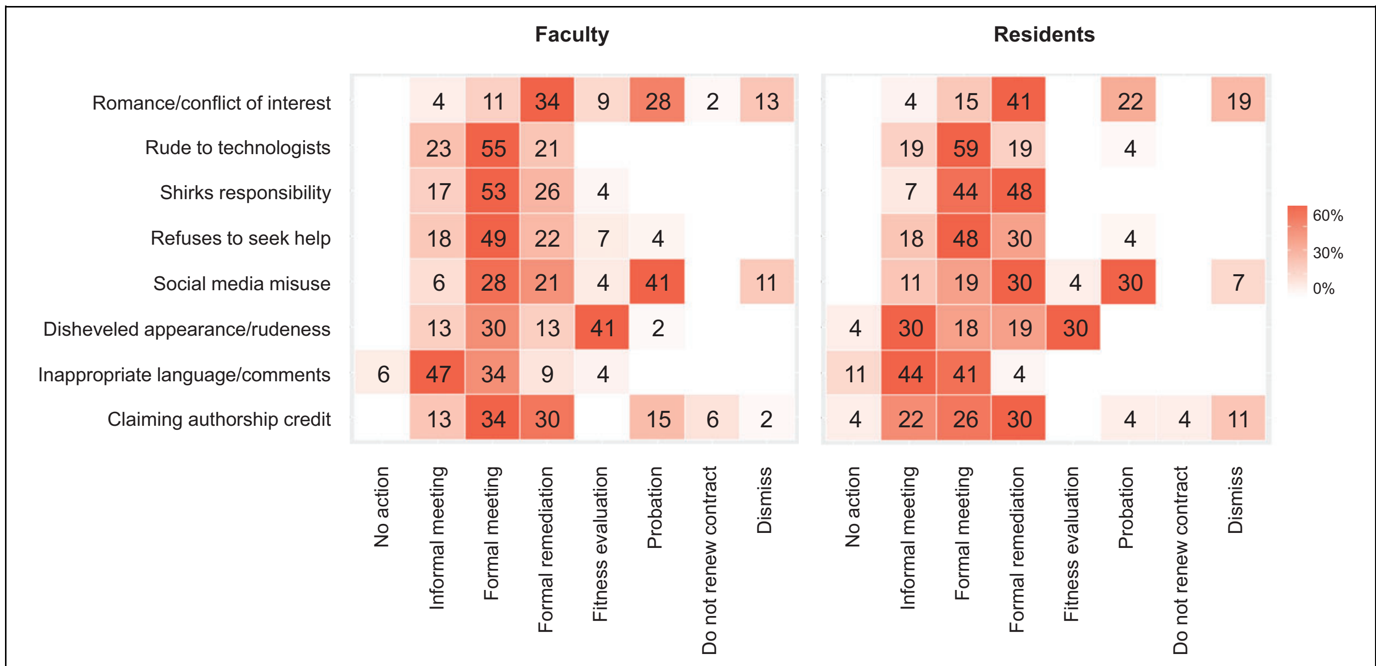

Figure 1. Survey results comparing faculty and residents.

Case scenario 1 was a case that covered issues of "honesty/trustworthiness" and "integrity." The majority of faculty/staff and residents answered this question with response numbers 4, 6, and 8 indicating the seriousness of this behavior. Numerous faculty/staff and residents took the opportunity to provide comments. It is clear from the responses to this case scenario that the majority of responders understood that this was a Health Insurance Portability and Accountability Act (HIPAA) violation and fraud, and the importance of dealing with the offending resident in a swift and firm manner. One faculty member suggested involving the institution's Graduate Medical Education (GME) office. One of the residents suggested reaching out to the offender in the case in order to understand whether there were personal issues that needed to be resolved.

Case scenario 2 was a case that covered issues of "respectfulness" and "interpersonal skills." Faculty/staff and residents were very similar in their responses with nearly all respondents choosing responses 2, 3, or 4. Free-text comments were in agreement as well with many suggesting that how they would respond to the offender would depend on if this was a first time offense or a repeat offense.

Case scenario 3 was a case that covered issues of "respectfulness," "dependability," and "motivation." Faculty/staff and residents were very similar in their responses with nearly everyone choosing responses 2, 3, or 4. This case scenario elicited some interesting free-text responses. Several of the faculty responses centered on finding out if there were other issues causing the behavior and the importance of documentation. One faculty member indicated they did not understand what a "fitness for duty" evaluation means. One resident responded that "The coming and going whenever the resident wants doesn't bother me as long as she's getting all her work done, which she isn't." Another resident questioned whether the department's policies on duty hours and resident participation were clear. Another wrote, "This behavior, while concerning, has not clearly broken any laws or violated policies. However, this resident is not a team player . . . "

Case scenario 4 was a case that covered issues of "accountability," "humility," "dedication to education," and "motivation." Faculty/staff and residents were very similar in their responses with nearly everyone choosing responses 2, 3, or 4. The majority of comments acknowledged that this is potentially a serious patient care issue.

Case scenario 5 was a case that covered issues of "confidentiality" and "compassion." Faculty/staff and residents were very broad in their responses with the majority choosing responses 3, 4, or 6. This case scenario elicited many comments from faculty indicating that this is an HIPAA violation and suggesting that the GME office and risk management be contacted. In contrast, 3 residents responded with free-text comments. One resident clearly recognized the serious nature of the behavior. One responded "I feel like social media (unless mentioned in rules) is somewhat of a gray zone. This situation sounds like it shouldn't have happened, but perhaps different people have different thresholds for what is acceptable." Another wrote "Does the department have a policy on social media? Are the residents given formal instruction on how to appropriately use social media? Is this the first post made by the resident of its kind?"

Case scenario 6 was a case that covered issues of "appearance" and "interpersonal skills." Faculty/staff and residents were very broad in their responses with the majority choosing responses 2, 4, or 6. This case scenario elicited many free-text responses from faculty/staff and residents. Most recognized

that there may be underlying mental health issues going on in this case as it was a recent change in behavior. One faculty/staff responded "Assuming that work is fine and he is showered, I am always loathe to discuss appearance issues. If there is suspicion for substance abuse or psychiatric disorder, then address that. One person's poor dress is another man's high style. If the shoes are an issue from a safety point of view, then that should be addressed. Frankly I don't think this level of appearance is any one's business." One resident responded, "If the only problem is clothing I would recommend that the program director get a hobby and mind his or her own damn business. I'm always mystified that any discussion about "professionalism" inevitably mentions someone's untucked shirt. We all have different fashion standards and I don't see how this is related to work performance."

Case scenario 7 was a case that covered issues of "interpersonal skills," "motivation," and "compassion." Faculty/staff and residents were very broad in their responses with the majority choosing responses 1, 2, 3, or 4. Most of the responses reflected the need for a meeting. One faculty pointed out that listening to other people's conversations out of context is a bad idea. One resident responded, "While not ideal, nothing seems too alarming. I would move quickly to an informal meeting if these comments continue."

Case scenario 8 was a case that covered issues of "honesty/trustworthiness," "integrity," and "interpersonal skills." Faculty/staff and residents were very broad in their responses with the majority choosing responses 2, 3, or 4. This case scenario generated the most comments overall. The majority found the behavior disturbing. Several faculty responded that responsibility here lies with the faculty to ensure that all participants are included as appropriate.

Discussion

This study is one of the few to comprehensively compare faculty responses to resident responses in regard to professionalism. Except for more residents listing compassion/empathy as a desirable professionalism attribute, we were unable to demonstrate any other differences between residents and faculty, and this was also true in the 8 case scenarios that were presented (Tables 1 and 2). In our study, interesting differences were observed between faculty/staff and residents when asked an open-ended question about what attributes constitute professionalism. Faculty/staff tended to list more traits of respect for self and others, whereas residents tended to list more traits of compassion/empathy, integrity, and dedication to learning and teaching. Interestingly, residents listed a number of attributes that are not typically considered to be traits of professionalism, including resourceful, rational, leadership, curious, reason, medical knowledge, competence, ability, make accurate diagnosis, knowledge/experience, professional knowledge, wisdom, intelligence, and professional skills (surgery, diagnosis). These responses raise questions about what is being taught to residents as to what constitutes "professional" behavior and may also point to the need, or to suggest an opportunity, to engage residents in a dialogue about their perceptions on what is meant by "professionalism."

Only a few other studies have attempted to compare views on professionalism between practicing physicians with those of residents/fellows. In a previous study involving different cohorts of pathology faculty and residents, Domen et al[15] demonstrated some potential generational or role-based differences in assessing and managing professionalism in 2 case scenarios and a lack of agreement in 2 other case scenarios. In that study, remarkable agreement was demonstrated between faculty and residents in a case scenario involving inappropriate comments by a resident and in another case scenario of resident impairment due to a medical condition, but there was no consensus demonstrated for 2 other cases (off-hour work requests by a faculty member and inappropriate behaviors by a resident toward others).[15]

A study by Borrero et al[16] compared cohorts of internal medicine faculty with the first- and second-year residents. Participants were asked to review 16 case scenarios of unprofessional behavior and to rate the level of the severity. There was only minimal disagreement between the faculty and the residents, and the authors concluded that there did not appear to be significant generational differences in relation to professionalism.[16] Another study[17] showed that groups of different generations had similar attitudes about professionalism, whereas a fourth study[18] demonstrated that educational level and age were related to some perceptions and aspects related to professionalism.

The results of our study also revealed several important teaching points. It is clear that written expectations for duty hours, dress code, and social media need to be in place. Expectations related to appropriate dress and use of social media often change over time and with different generations. Fitness for duty (eg, case scenario 6) and publication ethics and professionalism (eg, case scenario 8) were also identified as 2 other areas where directed educational efforts toward residents as well as faculty development sessions seem to be warranted. The nuances between remediation and probation are additional areas that should be clearly defined by residency programs so that both residents and faculty are clear on meaning and consequences.[8] However, as pointed out by others,[19] professionalism is not a simple problem that can be easily solved by, for example, just writing a policy on social media expectations and behavior, that is, policy in place, problem solved. Rather, professionalism is a complex problem. Complex problems often have no definitive answers, involve attempts to define and assess ambiguities, and do not lend themselves to being solved by the usual or standard strategies.[19] Although certain social media or other professionalism behaviors may be "simple" or clear-cut (eg, inappropriate disclosure of a patient's personal health information), there are many more areas or issues with nuances that usually make lapses in professionalism a complex problem. Thus, any educational or remediation approaches to lapses in professionalism should appreciate that while we can list attributes, values, and behaviors that constitute expected professional behavior, which can be further codified in policies

or other types of documents or guidelines, most lapses involve errors or deficiencies in judgment, an inability to tolerate uncertainty and ambiguity, or lack of experience and insight.[19,20]

The authors feel strongly that professionalism can be taught and learned and that professional growth and development are a normal part of the transformation from medical student to resident/fellow physician to practicing physician.[9,21-24] Indeed, professionalism has been shown to be one of the most important attributes for new hires in pathology to obtain and keep a position in practice, thus serious attention is warranted.[14] In addition, it is disturbing when unprofessional behavior is recognized in faculty and is seemingly ignored, such as the comment made on our survey that an attending inappropriately ordered molecular tests on several immediate family members and a fellow's inquiries about this behavior were not taken seriously. The importance of faculty development programs on assessing and mentoring/role modeling professionalism cannot be overemphasized.

Declaration of Conflicting Interests

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References

1. Accreditation Council for Graduate Medical Education. Web site http://www.acgme.org/. Accessed May 6, 2016.
2. Papadakis MA, Hodgson CS, Teherani A, Kohatsu ND. Unprofessional behavior in medical school is associated with subsequent disciplinary action by a state medical board. *Acad Med*. 2004;79:244-249.
3. Papadakis MA, Teherani A, Banach MA, et al. Disciplinary action by medical boards and prior behavior in medical school. *N Engl J Med*. 2005;353:2673-2682.
4. Reamy BV, Harman JH. Residents in trouble: an in-depth assessment of the 25-year experience of a single family medicine residency. *Fam Med*. 2006;38:252-257.
5. Pfeil SA, Paauw DS. Review of current models for remediation of professionalism lapses. In: Byyny RL, Papadakis MA, Paauw DS, eds. *Medical Professionalism: Best Practices*. Menlo Park, CA: Alpha Omega Alpha Honor Medical Society; 2015:51-57.
6. Regan L, Hexom B, Nazario S, Chinai SA, Visconti A, Sullivan C. Remediation methods for milestones related to interpersonal and communication skills and professionalism. *J Grad Med Educ*. 2016;8:18-23.
7. Dupras DM, Edson RS, Halvorsen AJ, Hopkins RH Jr, McDonald FS. "Problem residents": prevalence, problems and remediation in the era of core competencies. *Am J Med*. 2012;125:421-425.
8. Domen RE. Resident remediation, probation, and dismissal: basic considerations for program directors. *Am J Clin Pathol*. 2014;141: 784-790.
9. Smith LG. Medical professionalism and the generation gap. *Am J Med*. 2005;118:439-442.
10. Wynia MK, Papadakis MA, Sullivan WM, Hafferty FW. More than a list of values and desired behaviors: a foundational understanding of medical professionalism. *Acad Med*. 2014;89: 712-714.
11. Salinas-Miranda AA, Shaffer-Hudkins EJ, Bradley-Klug KL, Monroe ADH. Student and resident perspectives on professionalism: beliefs, challenges, and suggested teaching strategies. *Int J Med Educ*. 2014;5:87-94.
12. Domen RE, Talbert ML, Johnson K, et al. Assessment and management of professionalism issues in pathology residency training: results from surveys and a workshop by the Graduate Medical Education Committee of the College of American Pathologists. *Acad Pathol*. 2015;1:1-9. doi: 10.1177/2374289515592887.
13. Bruns DE, Burtius CA, Gronowski AM, McQueen MJ, Newman A, Jonsson JJ; IFCC Task Force on Ethics. Variability of ethics education in laboratory medicine training programs: results of an international survey. *Clin Chim Acta*. 2015;442:115-118.
14. Post MD, Johnson K, Brissette MD, et al. Employer expectations for newly trained pathologists: report of a survey from the Graduate Medical Education Committee of the College of American Pathologists [published online ahead of print October 2, 2015]. *Arch Pathol Lab Med*. doi: 10.5858/arpa.2015-0138-CP.
15. Domen RE, Johnson K, Conran RM, et al. Professionalism in pathology: a case-based approach as a potential educational tool. *Archiv Pathol Lab Med*. IN PRESS.
16. Borrero S, McGinnis KA, McNeil M, Frank J, Conigliaro RL. Professionalism in residency training: is there a generation gap? *Teach Learn Med*. 2008;20:11-17.
17. Hultman CS, Wagner IJ. Professionalism in plastic surgery: attitudes, knowledge, and behaviors in medical students compared to surgeons in training and practice—one, but not the same. *Ann Plastic Surg*. 2015;74: S247-S254.
18. Nath C, Schmidt R, Gunel E. Perceptions of professionalism vary most with educational rank and age. *J Dental Educ*. 2006;70: 825-834.
19. Lucey C, Souba W. The problem with the problem of professionalism. *Acad Med*. 2010;85:1018-1024.
20. Domen RE. The ethics of ambiguity: rethinking the role and importance of uncertainty in medical education and practice [published online ahead of print June 16, 2016]. *Acad Pathol*. doi:10. 1177/2374289516654712.
21. Lesser CS, Lucey CR, Egener B, Braddock CH III, Linas SL, Levinson W. A behavioral and systems view of professionalism. *JAMA*. 2010;304:2732-2737.
22. Steinberg JJ. Residency as identity transformation: the life stages of the *Homo medicalis*. *J Grad Med Educ*. 2010;2:646-648.
23. Cruess RL, Cruesso SR, Steinert Y. Amending miller's pyramid to include professional identity formation. *Acad Med*. 2016;91: 180-185.
24. Hafferty FW, Michalec B, Martimianakis MA, Tilburt JC. Alternative framings, countervailing visions: locating the "p" in professional identity formation. *Acad Med*. 2016;91:171-174.