

Residents' Perceptions of Their Own Professionalism and the Professionalism of Their Learning Environment

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Abstract

Background The competency of professionalism encompasses a range of behaviors in multiple domains. Residency programs are struggling to integrate and effectively assess professionalism. We report results from a survey assessing residents' perceptions of their professional competence and the professionalism of their learning environment.

Methods A survey was developed to assess specific behaviors reflecting professionalism based on the conceptualizations of key accrediting bodies. Residents rated their ability to perform the behaviors and reported the frequency with which they observed their fellow residents failing to perform the behaviors. Eighty-five senior residents in emergency medicine, internal medicine, pediatrics, psychiatry, and surgery specialties completed the survey (response rate=77%). Differences among domains (and among items within domains) were assessed. Correlations between perceived professionalism and the professionalism of the learning environment were described.

Results Cronbach alpha for professionalism competence was .93 and for professionalism in the

learning environment it was .86. Residents reported feeling most competent in being accountable (mean score=51.4%; $F=10.3$, $p<.001$) and in demonstrating respect. Some residents reported having trouble being sensitive to patients ($n=5$ to 23). Disrespectful behaviors were the most frequently witnessed professionalism lapse in the learning environment (mean=41.1%; $F=8.1$, $p<.001$). While serious lapses in professionalism were not witnessed with great frequency in the learning environment, instances of over-representing qualifications were reported. Problems in accountability in the learning environment were negatively associated with residents' perceived competence.

Conclusions Residents reported being able to perform professionally most of the time, especially in terms of accountability and respect. However, disrespect was a feature of the learning environment for many residents and several serious lapses were witnessed by a small number of residents. Accountability in the learning environment may be an important indicator of or influence on residents' professionalism.

Background

Trust in physicians and faith in the medical profession is thought to contribute to good health care outcomes by

promoting patient engagement in healing. Important to this trust is a belief that physicians demonstrate professionalism and act in the patient's best interest. To promote this trust, residency programs strive to ensure that residents are able to practice as professionals, but they struggle with how to operationalize and document the learning of professional behaviors. Without being able to accurately and precisely assess professionalism, programs find it difficult to set clear standards. The challenges associated with assessing professionalism have been widely discussed¹ and include questions regarding content (what is the definition of professionalism?), source (who should evaluate professionalism?), and context (within which settings and situations is professionalism most accurately assessed?). This paper reports on the development and use of a survey that incorporates a multifaceted assessment of professionalism, elicits the perspective of the resident, and focuses both on residents' abilities to be professional and on the professionalism exhibited in the residents' learning environment.

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Content of Assessments of Professionalism

The Accreditation Council for Graduate Medical Education (ACGME) professionalism competency is defined as follows²:

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to demonstrate: compassion, integrity, and respect for others; responsiveness to patient needs that supersedes self-interest; respect for patient privacy and autonomy; accountability to patients, society and the profession; and, sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

This conceptualization of professionalism is complex, both in terms of focus (eg, patients, society, profession) and required behaviors, which include actions in the interpersonal (respect), ethical (integrity), practical (accountability), and personal (sensitivity) domains. As a result, many assessments and measures focus on only one or two aspects (frequently ethics) or combine professionalism with communication and interpersonal skills,^{3–5} perhaps because residents typically manifest their professionalism through these skills. We view professionalism as a complex set of values, skills, and behaviors that although related are not reducible to either adherence to ethical principles or communication and interpersonal skills.

Few studies have addressed professionalism as a comprehensive construct, despite some evidence of its multiple domains.^{6–8} In addition, assessments of professionalism usually do not focus on patient care,^{6,8,9} possibly to avoid overlap with other core competencies. However, professionalism in patient care is important, and residents strongly prefer clinically oriented methods for learning and assessing professionalism.¹⁰

Sources for Information on Professionalism

Professionalism is often evaluated, at least in part, based on faculty observation and interpretation of residents' clinical practice. However, studies suggest that faculty should not be the sole source of such data: they may not observe enough of particular residents' behaviors,¹¹ faculty may refer to generalized impressions of residents,^{12,13} and some aspects of resident competence may unduly influence others.^{14,15} The ACGME recommends expanding perspectives (from nurses, physician assistants, care attendants, patients, and peers)^{4,16} to provide a 360° assessment of professional competence.¹⁷ And yet the resident perspective is often neglected, even though professional development requires strong skills in self-awareness and reflective practice.¹⁸ While self-assessment is known to be inaccurate for summative purposes,¹⁹ it can hone reflective ability and formatively help residents set goals and evaluate their progress.²⁰ This process is what

many see as the archetype for the development of the professional self^{21,22} within the self-regulating nature²³ and inherent complexity²⁴ of the medical profession.

The Importance of the Learning Environment in Professionalism

The clinical environment also serves as the learning environment, and as such occupies a central role in the development of professionalism and should be included in assessments,^{25–28} following ACGME¹⁸ as well as Liaison Committee on Medical Education²⁹ requirements that residency programs measure professional standards within learning environments and provide residents with a clinical environment that is conducive to learning. The environment can influence residents' perceptions of what constitutes acceptable clinical practice (sometimes considered the “hidden curriculum” or the “ecology of professionalism,”²⁹ or the context of care³⁰), and it can also determine their exposure, through role modeling,³¹ to a range of strategies for practicing professionally.

The goals of this paper, therefore, are to report on the development and use of a survey that asks residents to report on their own professional competence and on the professionalism of their learning environment and then to describe the relationship between these two perspectives on professionalism.

Method

Data Collection and Sample

Surveys were distributed to senior residents in 5 residency programs at our institution: emergency medicine, internal medicine including categorical and primary care, pediatrics, psychiatry, and surgery. Because our primary care program only has 8 residents per year, we surveyed both the current (postgraduate year 3) and recently graduated residents. The survey was fielded online in the summer of 2006; due to scheduling, surgery residents completed a paper version. Eight waves of e-mail reminders were sent. Response rate, which did not differ by specialty or mode of administration, was 77% (85/111) (TABLE 1).

Use of these data for research purposes was approved by the New York University School of Medicine Institutional Review Board.

Survey Instrument

Conceptual Framework The conceptual framework for the professionalism survey items was based on the consolidation of ACGME/American Board of Medical Specialties, American Board of Internal Medicine, and Association of American Medical Colleges definitions of professionalism and a comparison with other efforts to establish a professionalism framework.^{6,32,33} We identified actual behaviors representing each domain of professionalism by reviewing the literature and written standards of professionalism. Specific behaviors, rather than

TABLE 1 RESIDENCY PROGRAMS REPRESENTED AND RESPONSE RATES (N = 85)					
Program	Length, y	Sampled Residents	n	Total No. of Residents	Response Rate, %
Emergency Medicine	4	PGY-4	12	14	86
Medicine—Categorical	3	PGY-3	31	39	80
Medicine—Primary Care	3	PGY-3 and graduates	12	16	75
Pediatrics	3	PGY-3	11	16	69
Psychiatry	4	PGY-4	11	17	65
Surgery	5	PGY-4	8	9	89
Total			85	111	77

Abbreviations: PGY-3, postgraduate year 3; PGY-4, postgraduate year 4.

global dispositions or attitudes, were chosen because of evidence that a behavioral approach offers multiple advantages in assessment: professionalism may be best represented as a set of context-dependent behaviors³⁰ rather than as a stable trait; evaluators are reluctant to describe individuals as unprofessional³⁰; items reflecting professionalism should be measurable³²; and assessment is more accurate when individuals are asked to rate specific aspects of performance rather than global, often value-laden abstracts,^{19,34,35} even in the context of self-assessment.^{36,37} Therefore, we identified behaviors that, when performed, reflected professionalism (categorized as perceived competence) and those that, when observed, indicated unprofessional behaviors (categorized as professionalism of residents' learning environments).

Sixty-one professional competencies were identified (11 accountability, 12 ethics, 2 altruism, 13 excellence, 14 respect, and 9 sensitivity to patients), and 32 behaviors representing lapses in professionalism in the learning environment were identified (3 accountability, 18 ethics, 5 excellence, and 6 respect). Our review failed to identify any examples of unprofessional behaviors related to 2 ACGME professionalism domains: altruism and sensitivity to patient needs. Stem questions were based on frequency: perceived professionalism was framed as ability to perform the behavior when required by circumstances (using a 4-point Likert scale: rare (1), some of the time (2), most of the time (3), and all of the time (4)), and professionalism of the learning environment was framed as frequency of observing professional lapses among fellow residents in the past 6 months (using a 5-point scale: 1, not at all; 2, once; 3, 2 to 3 times; 4, 4 to 5 times; 5, 6 or more times).

Establishing Face and Content Validity The initial draft was then systematically reviewed by the professionalism curriculum steering committee (n = 15), representing most of the residency programs, through an elicitation questionnaire asking members to rank, delete, and/or add items. Combined with efforts to maintain representation of

original domains, ensure adequate sampling of behavior within domains, and reduce respondent burden, this process led to the final selection of 20 items for assessing perceived professionalism and 11 items for assessing the professionalism of the learning environment. TABLES 2 and 3 provide descriptions of and sources for these items.

Statistical Analyses

Distributions of responses for each item, organized by domain, were described (TABLES 2 and 3). Internal consistency of items was estimated using Cronbach α . Given the nonparametric nature of our ordinal survey data, differences in distribution between items within a domain were assessed using Wilcoxon signed rank test for paired comparisons (2 items) and Friedman χ^2 test for repeated measures (3 or more items). In order to identify strengths and weaknesses in professional competence across domains, a professionalism competence score for each resident was calculated as the percent of items within that domain that residents reported "always" being able to perform. Similarly, scores for learning environment domains were calculated as the percent of unprofessional behaviors within that domain that residents reported witnessing at least once in the past 6 months. Differences in mean scores for these domains were then compared using repeated measures analysis of variance (with Bonferroni-corrected post hoc comparisons). Correlations (Spearman ρ) were used to explore associations between residents' professionalism domain scores and the professionalism of the learning environment domain scores.

Results

Perceived Professionalism

Internal consistency of the 20 items assessing professionalism competence was .93 (Cronbach α). Alphas within the domains with multiple items were as follows: accountability = .61; ethics = .71; excellence = .82;

TABLE 2

DISTRIBUTION OF RESIDENTS' REPORT OF PROFESSIONALISM COMPETENCE AS DEFINED BY ACGME DOMAINS (N=85)

Domain	Item #	Items	Frequency of Ability to Perform				p value ^a
			Rarely	Some of the Time	Most of the Time	All of the Time	
Accountability to Patients, Society and the Profession	1	Ensure transfer of responsibility for patient ³⁹⁻⁴⁰	1.2%	4.7%	42.4%	51.8%	p=.336
	2	Follow through on tasks you agreed to perform ⁴¹	0.0%	0.0%	48.2%	51.8%	
Commitment to Ethical Principles	1	Ensure that patients are completely and honestly informed about treatment ⁴²	0.0%	8.2%	61.2%	30.6%	p=.166
	2	Apply appropriate confidentiality safeguards around patient information ⁴²	1.2%	5.9%	49.4%	43.5%	
	3	Recognize when you have a conflict of interest ⁴³	0.0%	5.9%	68.2%	25.9%	
	4	Acknowledge medical errors ⁴⁴	1.2%	3.5%	62.4%	32.9%	
Responsiveness to the Needs of Patients and Society that Supersedes Self-interest (Altruism)	1	Take the time and effort necessary to explain information to patients ^{39, 40}	0.0%	8.2%	68.2%	23.5%	N/A
Commitment to Excellence and Ongoing Professional Development	1	Identify areas for improvement within your own practice ⁴⁴	0.0%	4.7%	78.8%	16.5%	p=.058
	2	Receive and respond well to criticism from peers, colleagues, and supervisors ⁴³	0.0%	4.7%	70.6%	24.7%	
Demonstrate Respect, Compassion, and Integrity	1	Treat nurses and other health care professionals with respect ⁴³	0.0%	8.2%	56.5%	35.3%	p=.447
	2	Work collaboratively with other professionals ⁴²	0.0%	1.2%	65.9%	32.9%	
	3	Resolve interdisciplinary conflicts in a collegial and respectful manner ^{39, 40}	0.0%	4.7%	62.4%	32.9%	
	4	Maintain appropriate relationships with patients ⁴³	0.0%	7.1%	50.6%	42.4%	
	5	Respect patient rights and dignity by showing respect for patient privacy needs ⁴⁴	1.2%	5.9%	45.9%	47.1%	
	6	Present a professional appearance through clothing and hygiene ⁴⁴	1.2%	4.7%	48.2%	45.9%	
Demonstrate Sensitivity and Responsiveness to Patients	1	Be sensitive to patients' immediate physical and/or emotional needs ⁴³	1.2%	8.2%	62.4%	28.2%	p<.001 4<1,2,3,5 1<2,5
	2	Treat the patient as an individual by taking life circumstances, beliefs, personal idiosyncrasies, and support systems into account ⁴⁴	1.2%	7.1%	50.6%	41.2%	
	3	Demonstrate tolerance for a range of behaviors and beliefs ⁴¹	3.5%	5.9%	56.5%	34.1%	
	4	Ask patients and families about their beliefs, practices, and values when relevant to the medical issues ⁴⁵	5.9%	21.2%	50.6%	22.2%	
	5	Act without discrimination or bias when working with patients ⁴⁶	1.2%	4.7%	52.9%	41.2%	

NA = Not applicable (single item)

^a Wilcoxon Signed Rank repeated measures (2 items) and Friedman's Chi Square repeated measures (3 or more items) tests used to identify significant differences among items; follow-up to determine significance of pairwise comparisons determined by Wilcoxon Signed Rank tests with Bonferonni correction for number of comparisons.

TABLE 3

RESIDENTS' REPORT OF FREQUENCY OF PROFESSIONAL LAPSES IN THEIR LEARNING ENVIRONMENT?(N=85)

Domain	Item #	Items	Frequency of Unprofessional Behaviors Performed by Residents Past 6 Months					<i>p value</i> ^a
			Not at All	Once	Several (2-3 Times)	4-5 Times	6 or more Times	
Accountability to Patients, Society and the Profession	1	Failing to ensure transfer of responsibility for patient ^{39, 40}	56.5%	16.5%	17.6%	5.9%	3.5%	<i>p</i> = .971
	2	Failing to be available when on call ^{39, 40}	52.9%	22.4%	17.6%	5.9%	1.2%	
Commitment to Ethical Principles	1	Failing to respect patient rights ^{39, 40}	67.1%	15.3%	10.6%	7.1%	0.0%	<i>p</i> < .001 5 > 1,2,3,4 2 < 1,3,4,5
	2	Falsifying medical records or misrepresenting a clinical situation ^{39, 40}	87.1%	8.2%	4.7%	0.0%	0.0%	
	3	Participating in a conflict of interest ⁴³	54.1%	23.5%	16.5%	5.9%	0.0%	
	4	Breaching confidentiality ^{39, 40}	67.1%	14.1%	9.4%	7.1%	2.4%	
	5	Referring to oneself as, or holding oneself to be, more qualified than one is ^{31,32}	32.9%	18.8%	34.1%	9.4%	4.7%	
Commitment to Excellence and Ongoing Professional Development	1	Failing to receive and respond well to criticism from peers, colleagues, and supervisors ⁴¹	49.4%	29.4%	18.8%	2.4%	0.0%	N/A
Demonstrate Respect, Compassion, and Integrity	1	Being abusive and critical during times of stress ⁴¹	28.2%	22.4%	31.8%	10.6%	7.1%	<i>p</i> < .001 3 < 1,2
	2	Being disrespectful to patients, colleagues, or other professional staff ^{39, 40}	24.7%	25.9%	28.2%	9.4%	11.8%	
	3	Verbally abusing (e.g., shouting or yelling) patients or colleagues ⁴⁵	57.6%	17.6%	11.8%	8.2%	4.7%	

NA = Not applicable (single item)

^a Wilcoxon Signed Rank repeated measures (2 items) and Friedman's Chi Square repeated measures (3 or more items) tests used to identify significant differences among items; follow-up to determine significance of pairwise comparisons determined by Wilcoxon Signed Rank tests with Bonferroni correction for number of comparisons.

respect = .86; sensitivity to patients = .90. Overall, most residents reported being able to perform the professionalism behaviors most or all of the time (TABLE 2). However, small percents of residents reported being able to perform these behaviors only some of the time or rarely (range 1.2% [n = 1] to 22.4% [n = 19]), including 2 behaviors within the patient-sensitivity domain: 9.4% of residents (n = 8) reported being able to rarely or sometimes “be sensitive to patients’ immediate physical and/or emotional needs,” and 22.4% (n = 19) reported being able to rarely or sometimes “ask patients and families about their beliefs, practices, and values when relevant to the medical issues.” The distributions for these 2 items were significantly different from those of the other domain items ($F = 50.23$, $P < .001$). Significant differences in the distributions of items composing each domain were not found for any of the other 5 domains.

Mean percent professionalism competence scores (% of domain items the resident reported “always” being able to

perform) differed significantly across domains (Friedman $\chi^2 = 50.2$, $P < .001$) (TABLE 4). Accountability scores were higher than all other domain scores ($F = 10.3$, $P < .001$): residents, on average, were “always” able to perform 51.4% of the accountability behaviors compared with a mean range of 20.8% to 39.6% for the other domains. Residents also felt able to perform a mean of 39.6% of the behaviors in the respect domain compared with a mean of only 23.9% of the altruism and 20.8% of the excellence behaviors.

Professionalism of the Learning Environment

Internal consistency of the 11 items assessing professionalism of the learning environment was .86 (Cronbach α). Alphas for the 3 domains with multiple items were as follows: accountability = .64; ethics = .74; respect = .80. Residents’ report of the frequency with which they witnessed unprofessional behaviors in the past 6 months is shown in TABLE 3. Few residents reported

TABLE 4 DIFFERENCES AMONG DOMAINS OF PROFESSIONALISM: PROFESSIONALISM COMPETENCY SCORES AND PROFESSIONALISM IN THE LEARNING ENVIRONMENT SCORES (N = 85)

Domain	Mean, %	SD, %	Significance of Domain Differences ^a
Professionalism Competency Scores ^b			
Accountability	51.4	42.7	F = 10.3, <i>P</i> < .001
Altruism	23.9	43.0	Accountability > all others
Ethics	33.3	34.1	Respect > altruism, excellence
Excellence	20.8	38.2	
Respect	39.6	36.4	
Patient Sensitivity	33.6	38.4	
Learning Environment Professionalism Scores ^c			
Accountability	25.3	36.4	F = 8.1, <i>P</i> < .001
Ethics	22.3	25.7	Respect > all others
Excellence	21.9	41.7	
Respect	41.1	38.3	

^a Repeated measures analysis of variance for overall F; pairwise comparisons with Bonferroni correction for multiple tests.

^b Mean percent of items within each domain that resident reported “always” being able to perform.

^c Mean percent of items within each domain that residents reported witnessing more than once in the past 6 months.

witnessing most of the unprofessional behaviors more than 4 times. However, there were a few exceptions: 9.4% *n* = 8 of residents reported seeing someone fail to ensure transfer of responsibility, 14.1% *n* = 12 of residents reported witnessing a fellow resident referring to himself or herself as more qualified than he or she was, 17.6% *n* = 15 reported seeing a resident being abusive and critical during times of stress, and 21.2% *n* = 18 reported seeing a resident being disrespectful, all more than 4 times in the past 6 months. Significant differences among items were found in 2 domains. In the domain of commitment to ethical principles, “falsifying medical records or misrepresenting a clinical scenario” was witnessed the least often, and “referring to oneself as more qualified than one is” was witnessed the most often (Friedman $\chi^2 = 75.9$, *P* < .001). And in the domain of respect, residents witnessed verbal abuse less often than disrespect or abuse and criticism during times of stress (Friedman $\chi^2 = 30.2$, *P* < .001). Respect scores were higher than in the other domains (*F* = 8.1, *P* < .001). Residents witnessed a mean of 41.1% of the “disrespectful” behaviors at least once in the past 6 months, compared to witnessing a mean of 25.3% of the possible lapses in accountability, 22.3% of the possible

ethical breaches, and 21.9% of the possible lapses in commitment to excellence.

Perceived Professionalism and the Professionalism of the Learning Environment

Scores for the 4 domains of professional lapses in the learning environment were each significantly negatively correlated (Spearman ρ) with at least 2 of the domains of residents’ perceived professionalism (TABLE 5). Lapses in accountability in the learning environment were negatively correlated with residents’ perceived competence in 5 of the 6 domains.

Discussion

Our assessment of self-reported competence meets minimum requirements for reliability in terms of internal consistency. At our institution, experienced residents across specialties reported feeling fairly capable of consistently performing professionally across the 6 ACGME competency domains of professionalism. However, variations across domains and among items within domains suggest that professionalism is multifaceted, and the distribution of responses highlights some specific domains where our residents’ performance could improve. For example, within the area of sensitivity and responsiveness to patient needs, residents were least able to consistently ask patients about their beliefs and be sensitive to their needs—two principles central to providing high-quality care. This may reflect the challenge of providing care within our current health care system, or it may serve to identify residents who are in need of further supervision.

Our residents’ assessment of the professionalism of the learning environment also, in the aggregate, suggests that unprofessional behaviors do not occur with great frequency. However, some problematic areas were identified, particularly in terms of demonstrating respect. Additionally, a small but troubling number of residents reported that they witnessed, in a 6-month time frame, multiple failures in ensuring transfer of responsibility and multiple instances of residents’ misrepresenting their qualifications. Results from this survey suggest that the climate in some clinical settings may not communicate clear standards of respect and may allow specific lapses in professionalism that require further attention. The next steps are to pinpoint which settings and rotations represent less ideal standards of professionalism than others and to include observations of the professional behavior of not just residents but also faculty and staff.

We found that residents’ self-assessment of their professionalism is related to their reports of the professionalism of their learning environment. Accountability in the learning environment may be particularly important. The frequency of witnessing accountability lapses is negatively associated with residents’ perceived competence in being accountable, altruistic ethical, respectful, and sensitive to patient needs. We cannot

TABLE 5 CORRELATIONS (SPEARMAN ρ) BETWEEN PROFESSIONALISM IN THE LEARNING ENVIRONMENT AND PERCEIVED PROFESSIONALISM COMPETENCE (N = 85)				
Perceived Professionalism Competence	Frequency of Unprofessional Behaviors in the Learning Environment			
	Accountability	Ethics	Excellence	Respect
Accountability	-.26 ^a	-.11	.07	.03
Altruism	-.30 ^a	-.12	-.13	-.27 ^a
Ethics	-.40 ^b	-.23 ^a	-.22	-.19 ^a
Excellence	-.19	-.08	-.08	.01
Respect	-.45 ^b	-.28	-.31 ^b	-.13
Patient Sensitivity	-.43 ^b	-.22 ^a	-.27 ^a	-.14

^a $p < .05$
^b $p < .01$

establish the direction of causality; residents who self-report a lack of professionalism may also be likely to make such attributions about their learning environment. Our findings suggest that measuring professionalism in this way provides intriguing and potentially actionable information. Establishing the link between professionalism at the individual level and at the environmental level is essential to understanding how to ensure the professionalism of resident physicians.

The relatively small sample of senior residents drawn from a single institution limits the generalizability of our results. A single source (the resident) for information on both perceived competence in professionalism and the professionalism of the learning environment creates dependencies and bias in our assessment. Further, our newly created assessment tools need additional evidence of their validity and of their reliability in additional samples. Future studies may benefit from including a larger and multi-institutional sample to enhance generalizability of results and for conducting more sophisticated analyses of the underlying structure of professionalism (eg, exploratory and confirmatory factor analysis); they may also benefit from incorporating the resident perspective into a comprehensive, 360° assessment of professionalism of residents and of the learning environment that could include peer, faculty, staff, and especially patient perspectives.⁴⁶

While these assessments need further development, they, and others like them, provide a starting point for (1) ensuring that residents are attaining adequate levels of professional competence, (2) identifying program needs and training gaps at both individual and environmental levels, and (3) enhancing residents' ability to assess and reflect upon their professionalism, an imperative for the development of professionalism.

Until we can reliably and validly assess professionalism, both in individuals and as a feature of clinical settings, we risk sending the message that professionalism is either not as

important as the other competencies or is simply too complex for setting clear standards. This study provides some direction for moving us closer to effective and constructive assessment of professionalism and toward being able to identify the ways in which the learning environment may shape residents' professional development.

References

- 1 Stern DT. A framework for measuring professionalism. In: Stern DT, ed. *Measuring Medical Professionalism*. New York, NY: Oxford University Press; 2006:3–14.
- 2 Accreditation Council for Graduate Medical Education. Common program requirements: general competencies. Available at: <http://www.acgme.org/outcome/comp/GeneralCompetenciesStandards21307.pdf>. Accessed March 3, 2009.
- 3 Haurani MJ, Rubinfeld I, Rao S, et al. Are the communication and professionalism competencies the new critical values in a resident's global evaluation process? *J Surg Educ*. 2007;64(6):351–356.
- 4 Yudkowsky R, Downing SM, Sandlow LJ. Developing an institution-based assessment of resident communication and interpersonal skills. *Acad Med*. 2006;81(12):1115–1122.
- 5 Brinkman WB, Geraghty SR, Lanphear BP, et al. Effect of multisource feedback on resident communication skills and professionalism: a randomized controlled trial. *Arch Pediatr Adolesc Med*. 2007;161(1):44–49.
- 6 Symons AB, Swanson A, McGuigan D, Orrange S, Akl EA. A tool for self-assessment of communication skills and professionalism in residents. *BMC Med Educ*. 2009;9:1.
- 7 Veloski JJ, Fields SK, Boex JR, Blank LL. Measuring professionalism: a review of studies with instruments reported in the literature between 1982 and 2002. *Acad Med*. 2005;80(4):366–370.
- 8 Reisdorff EJ, Carlson DJ, Reeves M, Walker G, Hayes OW, Reynolds B. Quantitative validation of a general competency composite assessment evaluation. *Acad Emerg Med*. 2004;11(8):881–884.
- 9 Larkin GL, Binder L, Houry D, Adams J. Defining and evaluating professionalism: a core competency for graduate emergency medicine education. *Acad Emerg Med*. 2002;9(11):1249–1256.
- 10 Epstein RM, Hundert EM. Defining and assessing professional competence. *JAMA*. 2002;287(2):226–235.
- 11 Roberts LW, Green Hammond KA, Geppert CM, Warner TD. The positive role of professionalism and ethics training in medical education: a comparison of medical student and resident perspectives. *Acad Psychiatry*. 2004;28(3):170–182.
- 12 Chisholm CD, Whenmouth LF, Daly EA, Cordell WH, Giles BK, Brizendine EJ. An evaluation of emergency medicine resident interaction time with faculty in different teaching venues. *Acad Emerg Med*. 2004;11(2):149–155.

- 13 Mazor KM, Canavan C, Farrell M, Margolis MJ, Clauser BE. Collecting validity evidence for an assessment of professionalism: findings from think-aloud interviews. *Acad Med*. 2008;83(10)(suppl):S9–S12.
- 14 Ginsburg S, Kachan N, Lingard L. Before the white coat: perceptions of professional lapses in the pre-clerkship. *Med Educ*. 2005;39(1):12–19.
- 15 Silber CG, Nasca TJ, Paskin DL, Eiger G, Robeson M, Veloski JJ. Do global rating forms enable program directors to assess the ACGME competencies? *Acad Med*. 2004;79(6):549–556.
- 16 Haurani MJ, Rubinfield I, Rao S, et al. Are the communication and professionalism competencies the new critical values in a resident's global evaluation process? *J Surg Educ*. 2007;64(6):351–356.
- 17 Musick DW, McDowell SM, Clark N, Salcido R. Pilot study of a 360-degree assessment instrument for physical medicine and rehabilitation residency programs. *Am J Phys Med Rehabil*. 2003;82(5):394–402.
- 18 ACGME RRC Outcome Project Think Tank. Outcome Project Think Tank. Available at: <http://www.acgme.org/outcome/project/thinktank.asp>. Accessed March 14, 2009.
- 19 Wilkinson TJ, Wad WB, Knock LD. A blueprint to assess professionalism: results of a systematic review. *Acad Med*. 2009;84(5):551–558.
- 20 Davis DA, Mazmanian PE, Fordis M, Van Harrison R, Thorpe KE, Perrier L. Accuracy of physician self-assessment compared with observed measures of competence: a systematic review. *JAMA*. 2006;296:1094–1102.
- 21 Arnold L, Stern DT. What is medical professionalism? In: Stern DT, ed. *Measuring Medical Professionalism*. New York, NY: Oxford University Press; 2006:15–38.
- 22 Kegan R. *The Evolving Self: Problem and Process in Human Development*. Cambridge, MA: Harvard University Press; 1982.
- 23 Forsythe GB, Snook S, Lewis P, Bartone P. Making sense of officership: developing a professional identity for 21st century army officers. In: Snider D, Watkins G, eds. *The Future of the Army Profession*. New York, NY: McGraw Hill; 2002:357–378.
- 24 Ludmerer KM. *Learning to Heal*. New York, NY: Basic Books; 1985.
- 25 Verkerk MA, de Bree MJ, Mourits MJ. Reflective professionalism: interpreting CanMEDS' "professionalism". *J Med Ethics*. 2007;33(11):663–666.
- 26 Humphrey HJ, Smith K, Reddy S, Scott D, Madara JL, Arora VM. Promoting an environment of professionalism: the University of Chicago "roadmap". *Acad Med*. 2007;82(11):1098–1107.
- 27 Goold SD, Stern DT. Ethics and professionalism: what does a resident need to learn? *Am J Bioeth*. 2006;6(4):9–17.
- 28 Quaintance JL, Arnold L, Thompson GS. Development of an instrument to measure the climate of professionalism in a clinical teaching environment. *Acad Med*. 2008;83(10)(suppl):S5–S8.
- 29 Liaison Committee on Medical Education. Change to standard on the criteria for the types of patients and clinical conditions encountered by students. Available at: <http://www.lcme.org/standard.htm#ed2>. Accessed June 22, 2007.
- 30 Goldstein E, Maestas R, Fryer-Edwards K, et al. Professionalism in medical education: an institutional challenge. *Acad Med*. 2006;81(10):871–876.
- 31 Ginsburg S, Regehr G, Hatala R, et al. (2000). Context, conflict, and resolution: a new conceptual framework for evaluating professionalism. *Acad Med*. 2000;75(10)(suppl):S6–S11.
- 32 Shrank WH, Reed VA, Jernstedt GC. Fostering professionalism in medical education: a call for improved assessment and meaningful incentives. *J Gen Intern Med*. 2004;19(8):887–892.
- 33 Wilkinson TJ, Wad WB, Knock LD. A blueprint to assess professionalism: results of a systematic review. *Acad Med*. 2009;84(5):551–558.
- 34 Van De Camp K, Vernooij-Dassen MJ, Grol RP, Bottema BJ. Professionalism in general practice: development of an instrument to assess professional behavior in general practitioner trainees. *Med Educ*. 2006;40:43–50.
- 35 Ward M, MacRae H, Schlachta C, et al. (2003). Resident self-assessment of operative performance. *Am J Surg*. 2003;185(6):521–524.
- 36 Arnold EL, Blank LL, Race KE, Cipparrone N. Can professionalism be measured? The development of a scale for use in the medical environment. *Acad Med*. 1998;73(10):1119–1121.
- 37 Regehr G, Hodges B, Tiberius R, Lofchy J. Measuring self-assessment skills: an innovative relative ranking method. *Acad Med*. 1996;71(10)(suppl):S52–S54.
- 38 Wiggins MN, Coker K, Hicks EK. Patient perceptions of professionalism: implications for residency education. *Med Educ*. 2009;43:28–33.
- 39 University of Maryland School of Medicine. Professionalism evaluation form. Available at: <http://www.medschool.umaryland.edu/professionalism/evaluation>. Accessed February 17, 2009.
- 40 University of Toronto Faculty of Medicine. Report on professionalism in undergraduate medical education. Available at: <http://icarus.med.utoronto.ca/professionalism/>. Accessed February 17, 2009.
- 41 Phelan S, Obenshain SS, Galey WR. Evaluation of the noncognitive professional traits of medical students. *Acad Med*. 1993;68:799–803.
- 42 Project of the American Board of Internal Medicine Foundation; American College of Physicians–American Society of Internal Medicine Foundation; European Federation of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Ann Intern Med*. 2002;136(3):243–246.
- 43 Swick HM. Toward a definition of medical professionalism. *Acad Med*. 2000;75:612–616.
- 44 National Board of Medical Examiners. Embedding professionalism in medical education: assessment as a tool for implementation. Paper presented at: Invitational Conference Cosponsored by the Association of American Medical Colleges and the National Board of Medical Examiners; May, 2006; Baltimore, MD.
- 45 Culhane-Pera K. Ramsey multicultural family and community medicine curriculum: resident self-evaluation of five levels of cultural competence. Available at: http://www.acgme.org/outcome/downloads/prof_13.pdf. Accessed February 18, 2009.
- 46 Harrington JP, Mumaghan JJ, Regehr G. Applying a relative ranking model to the self-assessment of extended performance. *Adv Health Sci Educ Theory Pract*. 1997;2:17–25.