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ORIGINAL RESEARCH

Internal Medicine Rounding Practices and the Accreditation Council for Graduate Medical Education Core Competencies

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BACKGROUND: The Accreditation Council for Graduate Medical Education (ACGME) has established the requirement for residency programs to assess trainees' competencies in 6 core domains (patient care, medical knowledge, practice-based learning, interpersonal skills, professionalism, and systems-based practice). As attending rounds serve as a primary means for educating trainees at academic medical centers, our study aimed to identify current rounding practices and attending physician perceived capacity of different rounding models to promote teaching within the ACGME core competencies.

METHODS: We disseminated a 24-question survey electronically using educational and hospital medicine leadership mailing lists. We assessed attending physician demographics and the frequency with which they used various rounding models, as defined by the location of the discussion of the patient and care plan: bedside rounds (BR), hallway rounds (HR), and card-flipping rounds (CFR). Using the ACGME framework, we assessed the perceived educational value of each model.

RESULTS: We received 153 completed surveys from attending physicians representing 34 institutions. HR was used most frequently for both new and established patients (61% and 43%), followed by CFR for established patients (36%) and BR for new patients (22%). Most attending physicians indicated that BR and HR were superior to CFR in promoting the following ACGME competencies: patient care, systems-based practice, professionalism, and interpersonal skills.

CONCLUSIONS: HR is the most commonly employed rounding model. BR and HR are perceived to be valuable for teaching patient care, systems-based practice, professionalism, and interpersonal skills. CFR remains prevalent despite its perceived inferiority in promoting teaching across most of the ACGME core competencies. *Journal of Hospital Medicine* 2014;9:239–243. © 2014 Society of Hospital Medicine

In 1999, the Accreditation Council for Graduate Medical Education (ACGME) established the requirement for residency programs to assess trainees' competencies in 6 core domains: patient care, medical knowledge, practice-based learning, systems-based practice, interpersonal and communication skills, and professionalism.[1] With the rollout of the Next Accreditation System (NAS), and a focus of graduate medical education turning to the assessment of milestones within the ACGME core competencies, it is essential for clinician educators to reflect on how current educational activities meet the needs of our learners and enable compliance with the new recommendations.[1]

On internal medicine services in the inpatient setting, clinician educators routinely supervise and teach trainees during attending rounds. The long-standing practice of rounding innately offers a forum for making patient care decisions and for sharing medical knowledge.[2] However, the rounding process may also afford clinician educators opportunities to teach material relevant to the other 4 ACGME core competencies.[3] Despite the ubiquitous presence of rounds on internal medicine services, rounding practices vary markedly among and within institutions.[4,5] Furthermore, there is no consensus with respect to best practices for rounds in general, or more specifically as they pertain to graduate medical education and teaching within the 6 core competencies.

We have conducted a multicenter survey study of internal medicine rounding practices at academic institutions from all US regions. As part of a larger investigation of rounding practices, we surveyed attending physicians regarding the frequency with which they participated in different rounding models (card-flipping rounds [CFR], hallway rounds [HR], or bedside rounds [BR]), and the perceived capacity of each of these models to promote teaching of material relevant to the 6 ACGME core competencies.

METHODS

Sites and Subjects

We disseminated a survey using internal medicine educational leadership and hospital medicine clinical leadership electronic mailing lists (eg, the Society of General Internal Medicine [SGIM] and the Society of

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Hospital Medicine [SHM]). These listservs gave us access to leaders in the field at institutions affiliated with residency programs. Our initial survey distribution included attending physicians from 58 institutions. We asked these leaders for their assistance in distributing the survey within their respective institutions to physicians who attend on inpatient medicine teaching services.

Survey Development and Domains

The survey was composed of 24 multiple-choice questions and 1 open-ended question, and was adapted with permission from a survey created by Mittal and colleagues.[6] We initially piloted the survey with attending physicians in the Division of Hospital Medicine at the University of California, San Francisco. We defined the following 3 models for attending rounds based on our review of the literature, as well as interviews with inpatient clinician educators and internal medicine residency leadership at 3 different institutions: (1) BR, where the discussion of the patient and care plan occur in the presence of the patient with his or her active participation; (2) HR, where the discussion of the patient and care plan occurs partially outside the patient's room and partially at the patient's bedside in the presence of the patient; and (3) CFR, where the discussion of the patient and care plan occurs entirely outside of the patient's room and the team does not see the patient together. The survey asked respondents for their perceptions about how well each model promotes teaching content relevant to the 6 ACGME core competencies (options: very poorly, poorly, neutral, well, very well).

Survey Process

The survey was administered electronically using SurveyMonkey (SurveyMonkey, Menlo Park, CA). We sent an initial survey request to 58 institutional contacts. These contacts were designated clinical and educational leaders in the SHM and SGIM, and were an invited working group. Those leaders were asked to reach out to physicians within their institutions who attended on teaching services. We left the survey open for accrual for a total period of 80 days. Participants received 2 reminder emails asking for their assistance in distributing the survey. The study received approval by our institutional review board.

Data Analysis

We employed means and standard deviations to classify rounding model preference and prevalence. We used Pearson's χ^2 test to assess the association among the 3 rounding models and the perceptions of how well they worked for teaching material relevant to the ACGME competencies. We dichotomized measures with "well" and "very well," forming the "well" category. All analysis was conducted using Stata 11.0 (StateCorp, College Station, TX).

RESULTS

Attending Characteristics

We received 153 completed surveys from attending physicians representing 34 unique institutions. All respondents were internal medicine physicians who attend on inpatient medicine teaching services. Institutions spanned all regions of the United States. The characteristics of the surveyed population are described in Table 1.

Rounding Characteristics

HR proved to be the model employed most frequently for both new and established patients (61% and 43%, respectively) (Table 2). The next most frequently utilized rounding models were CFR for established patients (36%) and BR for new patients (22%). Of attending

TABLE 1. Attending and Hospital Characteristics

Variable	Category	Percent
Age, y	≤40	62%
	41–50	21%
	51–60	13%
	>60	3%
Sex	Female	46%
	Male	54%
Job description	Hospitalist	61%
	Outpatient internist	10%
	Mixed internist*	14%
	Specialist	15%
Experience, y	≤2	21%
	3+	79%
Months teaching/year	≤3	50%
	3+	50%
Decisions requiring attending input†	≤30%	40%
	>30%	60%
Team cap‡	<20	47%
	≥20	53%
Average daily census	≤10	51%
	>10	49%
Region	Midwest	8%
	Northeast	19%
	South	28%
	West	44%
Hospital type	University	82%
	Community	8%
Hospital size, beds	<300	23%
	300–500	32%
	>500	55%

NOTE: *A mixed internist is an attending who practices both in the inpatient and outpatient settings. †What percentage of clinical decisions do you estimate require active attending input during attending rounds? ‡What is the maximum number of patients per team?

TABLE 2. Percent of Time Attending Physicians Use Card-Flipping Rounds, Hallway Rounds, and Bedside Rounds

	New Patients	Old Patients
Card-flipping rounds	17% (12%–22%)	36% (31%–42%)
Hallway rounds	61% (55%–68%)	43% (37%–48%)
Bedside rounds	22% (16%–27%)	21% (15%–26%)

physicians, 53% never used BR for established patients, and 46% never used them at all. When asked about barriers to bedside rounding, respondents cited time constraints, patient psychosocial complexities, and patient privacy as the most significant barriers to performing BR (64%, 39%, and 38%, respectively). Only 6% felt that patient preference was a barrier to bedside rounding.

Rounding Models and Core Competencies

Most attending physicians surveyed perceived CFR to perform "well" or "very well" for teaching medical knowledge (78%), practice-based learning (59%), and systems-based practice (53%). Conversely, a minority thought CFR performed "well" or "very well" with respect to teaching patient care (21%), professionalism (27%), or interpersonal skills and communication (16%).

The majority of respondents perceived HR to perform "well" or "very well" across all ACGME domains, including teaching patient care (91%), medical knowledge (87%), practice-based learning (74%), systems-based practice (69%), professionalism (87%), and interpersonal skills and communication (90%).

Most attending physicians surveyed felt BR performed "well" or "very well" with respect to teaching patient care (88%), medical knowledge (58%), professionalism (92%), and interpersonal skills and communication (95%). A minority of participants perceived BR to perform "well" or "very well" in teaching practice-based learning (47%) or systems-based practice (47%).

Compared with CFR, both HR and BR were perceived to be significantly more effective in teaching patient care, professionalism, and interpersonal skills and communication (Figure 1). Respondents rated BR as significantly inferior to both CFR and HR in teaching medical knowledge. In addition, BR was perceived to be inferior to HR with respect to teaching systems-based practice and practice-based learning.

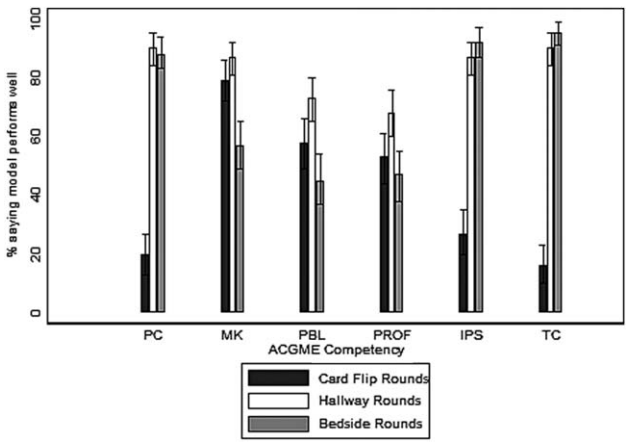

FIG. 1. Perceived efficacy of different rounding models for teaching Accreditation Council for Graduate Medical Education (ACGME) competencies. Percentage of attendings replying "well" or "very well" to the question: "Please indicate how well the 6 ACGME core competencies are promoted by each of the following rounding structures (options: very poorly, poorly, neutral, well, very well)." Statistical significance is demonstrated by nonoverlapping error bars. IPS, interpersonal and communication skills; MK, medical knowledge; PBL, practice-based learning; PC, patient care; PROF, professionalism; SBP, systems-based practice.

DISCUSSION

In the inpatient setting, attending rounds may offer a primary means for attending physician teaching of trainees. Although all trainees are assessed by their knowledge and skills within the 6 ACGME core competencies, little attention has been paid as to how various rounding models support resident education across these domains.[4] To our knowledge, this is the first cross-national, multicenter survey study that examines how well the 3 most commonly employed internal medicine rounding practices promote teaching of material relevant to the 6 ACGME core competencies. We found that significant heterogeneity exists in current rounding practices, and different models are perceived to perform variably in their promotion of teaching content within the educational competencies.

In general, with respect to teaching across ACGME domains, CFR were perceived to be less effective compared with HR or BR, and significantly less so in the teaching of patient care, professionalism, and interpersonal skills and communication. Yet, CFR remain widely employed and are used by 17% of attending physicians for new patients and more than 36% for old patients. The reason for their ongoing use was not assessed by our survey; however, this practice does not appear to be driven by educational objectives. The prevalence of CFR may be related to a perception of improved efficiency and a frequent preference among trainees and attending physicians to do this model of rounding. There may be other perceived benefits, including physical comfort of providers or access to the electronic health record, but these qualities were not captured in this study. To our knowledge, there are no prior studies specifically examining CFR as a rounding model.

HR was the most commonly utilized rounding method for the majority of respondents. Attending physicians considered HR particularly effective in teaching patient care, medical knowledge, professionalism, and interpersonal skills and communication. The perceived value of HR may be related to the bimodal nature of the encounter. The discussion of the patient and the care plan outside of the room may include, but is not limited to, formulating the care plan through the formal oral case presentation, focusing on the patient management component of patient care, and sharing medical knowledge without fear of provoking patient anxiety or causing confusion. Subsequently, the time spent in the room may allow for observation and instruction of the physical examination, observation and modeling of professionalism in the patient interaction, and observation and modeling

of effective communication with the patient and family members.

We found it interesting that attending physicians also considered HR superior to BR in their capacity to teach practice-based learning and systems-based practice. This requires further exploration, as it would seem that increased patient involvement in care plans could offer advantages for the teaching of both of these competencies. Despite the popularity of this rounding structure, there is little prior evidence examining the pros and cons of HR.

Conversely, there is significant literature exploring BR as a rounding model. Prior research has elucidated the multiple benefits of bedside rounding including, but not limited to, teaching history taking, physical examination skills, and clinical ethics; modeling humanism and professionalism; and promoting effective communication.[3,7–11] Furthermore, the majority of patients may prefer bedside presentations.[11–13] Despite their apparent merits, roughly half of attendings surveyed never conduct BR. This may reflect the trend reported in the literature of diminishing bedside teaching, and more specifically, reports that in the United States, less than 5% of time is spent on observing learners' clinical skills and correcting faulty exam techniques.[2,14] The perception that HR and CFR were superior to BR in teaching medical knowledge suggests that attending physicians value the teaching that occurs away from the patient's bedside. Prior studies suggest that, of the core clinical skills taught on the wards, trainees may find teaching of differential diagnosis to be most challenged by BR, and residents may not appreciate the educational benefits of BR in general.[11,13] Although time constraints were cited as a significant barrier to BR, recent studies have suggested that BR do not necessarily take more time overall.[15] The notion that patient psychosocial complexities may limit BR has been reflected in the literature,[16–20] but these situations may also afford unique bedside teaching opportunities.[21] Finally, faculty, and in particular more junior attendings, may be uncomfortable teaching in the presence of the patient.[13] This barrier may be overcome through faculty development efforts.[15]

As internal medicine training transitions to the NAS and a milestone-based assessment framework,[1] residency programs will need to consider how rounding can be structured to help trainees achieve the required milestones, and to help programs meaningfully assess trainee performance. Our survey indicates that HR may be effective across all of the competencies and the potential for this should be further explored. Yet, HR may allow for a limited ability to observe learners with patients, as there may only be cursory data gathering from the patient, a brief physical exam, and limited communication with patients and/or family members. Furthermore, the patient-centeredness of HR may be called into question, given restricted emphasis on shared decision making. Finally, as efficiency remains crucial in the wake of duty-hour reform, HR may also prove to be more time consuming than BR, given that it often requires information shared outside of the patient's room to be repeated in the patient's presence. Ultimately, there may not be a 1 size fits all solution, and institutions should ensure the organization and structure of their rounding models are optimally designed to enable the achievement and assessment of ACGME milestones.

Our study has several limitations. Due to our employment of snowball sampling, we could not calculate a response rate. We also recruited a self-selected sample of internal medicine attending physicians, raising the possibility of selection bias. However, we captured a wide range of experience and opinion, and do not have reason to believe that any particular viewpoints are over- or under-represented. Further, our study may have been influenced by sampling bias, reaching primarily attending physicians at university-affiliated medical centers, calling into question the generalizability of our results and making any comparisons between academic and community health centers less meaningful. Nonetheless, we received responses from both large and small medical centers, as well as quaternary care and community-based hospitals. The reported benefits and barriers were respondents' personal perceptions, rather than measured outcomes. Moreover, we focused primarily on the effectiveness of teaching of the ACGME competencies and did not explore other outcomes that could be impacted by rounding structure (eg, patient satisfaction, trainee satisfaction, length of stay, time of discharge). Our study also did not address the variety of complex factors that influence the location and methods of attending rounds. For example, the various institutions surveyed have a variety of team sizes and compositions, admitting schedules, geographic layouts, and time allotted for attending rounds, all of which can influence choices for rounding practices. Finally, we did not assess resident perceptions, an area of future study that would allow us to corroborate the findings of our survey.

In conclusion, in this cross-national, multicenter survey study of the 3 most prevalent internal medicine rounding practices, respondents utilized HR most commonly and believed this model was effective in teaching across the 6 ACGME core competencies. Those surveyed identified the benefits and barriers to BR, and a substantial number continue to use CFR despite recognizing its educational limitations. Future studies should explore factors that promote various rounding models and assess the relationship between rounding structure and educational outcomes for trainees.

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